

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXXII.

NEW YORK, SATURDAY, MAY 28, 1898.

No. 22.

ORIGINAL ARTICLES.

THE ANATOMY AND FUNCTIONS OF THE PELVIC FLOOR IN WOMEN AND THE OPERATION FOR ITS REPAIR.

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PROBABLY no part of the female pelvis has been the subject of so much painstaking thought as the pelvic floor, or, more particularly, that portion of the pelvic floor known as the perineum. It would therefore seem somewhat audacious to attempt to offer anything new, as the present teaching concerning the dynamics of these parts, especially of the functions of the female perineum, leaves little to be said. With the elaborate exposition of its functions and anatomy, however, students and general practitioners become confused and discouraged.

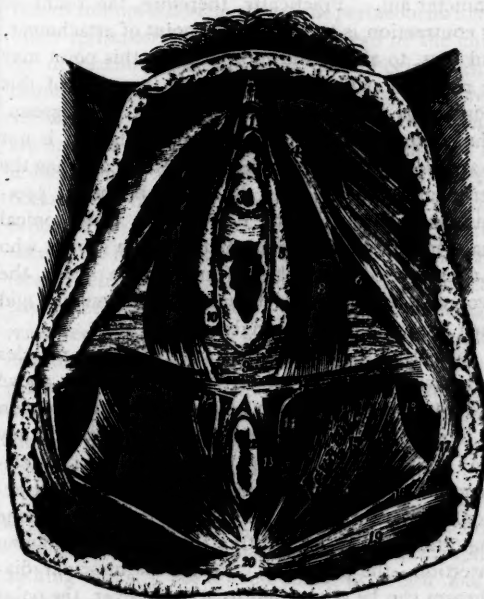
It shall therefore be my endeavor to simplify as far as possible the important points of the subject. The essential feature which distinguishes my position from that of many authorities is my belief that the essential structure in the floor of the pelvis is not the perineum, but rather the levator ani muscle. Page after page in gynecologic literature has been expended in describing the perineal body, and opinions have varied from the elaborate theory mentioned above to the more recent dictum of Emmet that "no such body as a perineal body exists save as an imaginary one." Inasmuch as there is no particular structure in the perineum which is not common to the pelvic floor, in just so much am I in accord with Dr. Emmet.

In order that the points at issue may be clearly defined, I may perhaps be permitted to state, somewhat axiomatically, (1) that the important, essential structure of the pelvic floor, and the one upon which all active functions depend, is the levator ani muscle and its fascia; (2) that the functions of the perineum are entirely passive and may be classified as follows: (a) Anatomically the perineum fills a certain amount of space between the outlets of the two canals, the vagina and rectum; (b) give it attachment to the movable end of the levator ani muscle, and (c) it must get out of the way of the advancing head

in parturition and of fecal matter in defecation—or more correctly, to be drawn out of the way. All active movement of the pelvic floor is accomplished by the various muscles composing the muscular diaphragm of the pelvis. These muscles are all under one nervous control, all act in unison, and all of the less important ones are simply accessories of the levator ani proper.

Considering as a unit the muscles and fascia which compose the pelvic diaphragm, it may be said that

FIG. 1.



The muscles of the pelvic floor, and the relations of the sphincter and its fellows. Note the close union with the tendinous center of the perineum and the interweaving with the transversus perinei and the bulbo-cavernosus, also the lateral flattening of the anus and the tendon front and rear. 1, glans clitoridis; 2, corpus clitoridis; 3, meatus urinarius; 4, tendon of ischiocavernosus muscle; 5, bulb; 6, ischiocavernosus muscle; 7, vaginal entrance; 8, sphincter vaginae or bulbo-cavernosus muscle; 9, fossa navicularis; 10, Bartholin's gland; 11, superficial transversus perinei muscle; 12, anus; 13, sphincter ani externus; 14, 15, levator ani muscle; 16, coccygeus muscle; 17, great sacrospinous ligament; 18, obturator internus muscle; 19, gluteus maximus; 20, os coccygis. (Dickinson, modified from Breisky and Savage.)

together they make a cone-shaped muscle, with a bony origin and a tendinous attachment, the bony origin being the entire circumference of the pelvis, and the attachment, the tendinous center known as the perineal raphe. A vulgar illustration of the shape of this combined muscle is an ordinary meal-bag

¹ Read at the Ninety-second Annual Meeting of the Medical Society of the State of New York, held at Albany, N. Y., January 25, 26, and 27, 1898.

with a hoop in the top to keep the mouth open and a string tied around the middle of the bag, concentrating its fibers at one point. The bag from the hoop to the string represents the levator ani muscle and its accessories. All of the divisions of this great muscular diaphragm reach directly from the bony origin of the pelvis to the tendinous raphe of the perineum, and, with the exception of the levator ani proper, terminate there. These divisions are the superficial and deep transversus perinei, the bulbocavernosus or constrictores vaginae, and the erectores clitorides. The fibers of the levator ani, assuming a more or less oblique direction and interlacing with each other, sweep entirely across the outlet of the pelvis, and are bound together and to the fascia in the raphe of the perineum, at which point they anastomose with the internal sphincter ani. Practically, therefore, the result of its contraction is to elevate this point of attachment, and thus, to all intents and purposes, this point may be regarded as the distal point of insertion of this muscle, as well as of all others of this group. The conical shape of the muscular diaphragm is not so apparent when the parts are quiescent as when the perineum is forced down by intra-abdominal pressure, as in parturition or defecation. This conical shape may be readily demonstrated in a subject who is anesthetized by hooking (through the anus), the two index-fingers above the sphincter ani muscles and then dragging down strongly.

Accepting then, the description of these muscles as I have given it, with a bony attachment above and a tendinous insertion below, we are in a position to inquire into their functions. Briefly stated they are: (1) to assist in parturition; (2) to assist in defecation, and (3) to assist in coition. The contraction of all the muscles of the pelvic floor has one important result, *vis.*: lifting the point of common insertion—the perineum. Before the muscular diaphragm can be stimulated to act, however, the point of insertion must be depressed. This is accomplished in parturition and defecation by the intra-abdominal pressure which forces down the floor of the pelvis, and in coition, by the admission of the male organ. To illustrate the action of this muscle more in detail, it may be said that as the child's head advances in parturition, the pelvic floor gradually yields and descends until the head reaches that point at which the occiput engages under the symphysis. As soon thereafter as the head in advancing to the front affords opportunity to the levator ani to contract, exerting its power along a line posterior to the point of greatest protrusion of the head, this muscle contracts, and, sweeping the perineum over the face of the child, lifts it up into its proper position. During

this process the head does not necessarily advance. The intra-abdominal pressure holds it firmly while the perineum is lifted back into its normal position by the levator ani, thus leaving the child's head without the genital canal.

In defecation the levator ani muscle acts in precisely the same way, with the exception that its movable point of insertion is in front of the protruding mass instead of behind it. Its action, however, is most apparent in a condition of extreme constipation. Let us consider then, step by step, the details of this important function, *vis.*, defecation. Let us suppose the rectum to be distended by a large, solid, fecal mass. In order to force this out, the subject draws a long breath, fixes the abdominal muscles, thus increasing the intra-abdominal pressure and forcing down the rectum and its contents together with the floor of the pelvis. The sphincter ani muscle is made to open only by forcing down the pelvic floor. The structure of the levator ani in the median line between the tip of the coccyx and the anus is almost entirely fibrous in character and devoid of elasticity. As the anus descends, its posterior segment swings backward in an arc the radius of which is the distance from the tip of the coccyx to the anus. The perineum also descends and swings slightly to the front. These two movements naturally open the anal orifice, and, while the intra-abdominal pressure maintains the position of the contents of the rectum, the levator ani lifts the perineum over it and the fecal matter is extruded in a manner analogous to the mechanism of labor. While this process is more plainly demonstrable in cases of constipation, it is pursued to a greater or less degree in every act of defecation.

The process of coition need not be particularized, except to state that in this act the function of the floor of the pelvis is performed by the levator ani muscle in lifting the perineum.

It becomes apparent, therefore, that the proposition laid down in the beginning of this paper, that the essential structure of the floor of the pelvis is the levator ani muscle and its accessories, is true. It is likewise manifest that the functions of the perineum are entirely passive and may be summed up in three concise statements, as follows: (1) To fill in a certain amount of anatomic space; (2) to give attachment to the levator ani and its accessories, and (3) to get out of the way of the advancing head of the child or of the protruding fecal mass.

We are now ready to lay down the proposition that injuries to the pelvic floor are serious in proportion to the degree of impairment which they produce in the structure and functions of the levator ani. Lacerations may occur directly in the median

line of the perineum, splitting the raphe and so dividing it into two equal parts. In my experience such lacerations occur in unassisted labors in which the head is forced down by unusually strong pains so rapidly that the levator ani and its fascia are not allowed time to stretch. In hasty deliveries by forceps, the median tear is also not unusual. In this injury, the muscular fibers are rarely interfered with. The two ends of the transversus perinei are separated, and the tendinous center to which all these muscles are attached or bound down is destroyed. The muscles are therefore set free, and the more powerful ones, the transversus perinei, retract, thus drawing the torn edges of the fascia with them into the tissues on either side of the pelvis. The floor of the pelvis, from the pubis back to the rectum, and the fibers of the levator ani muscles, being split along the median line, are drawn aside by the contraction of the transversus perinei as one would separate two halves of a portière. This illustration was original with Dr. Emmet, and is most apt.

In the majority of instances the laceration is very irregular in its outline, and usually passes obliquely across the perineum and follows either one or both of the sulci of the vagina. The lacerations may or may not extend into the rectum. A careful study of such injuries has been made by both Dickinson of Brooklyn and Reynolds of Boston, and it has been determined that the tendinous center escapes, but as the laceration extends across the fibers of the levator ani and the transversus perinei and their fasciæ of the side on which the injury occurs, the result is the same although not to an equal degree: the transversus perinei retract upward and outward into the deeper structures, carrying the fibers of the levator ani and the fasciæ of both muscles with them. The result of this injury is that the function of the levator ani is destroyed. The distal end no longer has a firm point of attachment. The muscle therefore can no longer assist either in defecation or in parturition. The support which it ordinarily gave to the posterior wall of the vagina and the anterior wall of the rectum is removed. The outlet of the vagina gapes and the anterior wall of the rectum with the vagina prolapses downward forming a rectocele.

Studying this condition, now, as applied to the two functions, parturition and defecation, we find that in the former, as there is no longer a perineum, it is no longer placed under the obligation of getting out of the way, and therefore there is no function to be performed by the levator ani muscle. Parturition, as far as the floor of the pelvis is concerned, is simple and easy and usually occurs without deleterious influence upon these parts. Defecation, on the contrary, is seriously interfered with. The anterior pull

upon the sphincter ani no longer obtains, and the orifice dilates with difficulty. This dams back, as it were, the content of the rectum, which now tends to crowd down the anterior wall and make its exit through the vulva. It becomes apparent that this unfortunate consequence is the direct result of impairment of the function of the levator ani muscle. The effect of this laceration upon the position of the uterus is due to the fact that when the insertion of the levator ani is destroyed, the prolapse of the posterior vaginal wall gradually carries the cervix uteri downward and forward until finally the fundus retroverts, and, in aggravated cases, the entire organ is protruded through the vulva.

It remains now to consider the condition when the laceration has extended through the sphincter ani into the rectum. In these cases the function of the levator ani is destroyed and the perineum no longer offers resistance to the advancing head of the child. In defecation, the sphincter muscle being torn, it cannot offer resistance to the fecal mass; therefore, a rectocele is not developed and no malign influences are brought into play to drag down and displace the uterus. While, under these circumstances, there is no occasion for the levator ani muscle to act, the condition of the patient is even more deplorable, in that there is no longer control of the rectum and constant, fecal discharges and escape of gas annoy and vex the patient beyond endurance. It may be incidentally remarked that when the laceration results in absolute destruction of the perineum and extends through the sphincter muscle into the rectum, the uterus, as a rule, remains in normal position, thus demonstrating the fact that the perineum cannot be regarded as a support to the uterus, as was formerly taught.

The Operation.—The only active function that any muscle is called upon to perform is that of contraction, but in its contraction it can accomplish nothing unless it has a fixed point of origin and a movable point of insertion. The levator ani is no exception to this rule. Any operation for the repair of the pelvic floor in order to be effectual must aim to restore to this muscle its distal attachment. It has been seen that in lacerations of the perineum of every form the torn ends of the muscles, with their fasciæ, have retracted into the tissues on either side, and must be brought again into apposition in order that continuity may be restored. This is a simple matter in the primary operation performed immediately after delivery, but, in cases in which the injury is of long standing, before these tissues can be drawn out of their retracted positions and brought into apposition, the rectocele must be carried back out of the way so that approximation of the muscles may be effected at their original site in

front of the rectum. In other words, the tissues constituting the rectocele must be carried upward and backward, and the anus must be drawn forward and upward, and, at the same time, the ruptured edges of the fasciæ and the tendinous edges of the muscles must be brought in contact. This, I find, can be accomplished by a procedure which is readily understood, extremely simple in its execution, and effectual in its results. Its advantages as compared with other operations are that it restores the perineum to a more nearly normal condition than any other operation known to me; moreover, convalescence from the operation is entirely devoid of pain, and the patient may assume any position in bed which affords her comfort, and, if she cannot af-

FIG. 2.



Showing area to be denuded.

ford to pay for the constant attendance of a nurse, the operation permits of her getting out of bed to attend to the calls of Nature. This commendable feature is explained by the fact that only such tissues as normally belong in apposition are brought together, and all the stitches are passed through the mucous membrane inside of the vagina instead of through the skin.

It is hardly necessary to say that the field of operation is made aseptic. By rolling out the labia on either side the remains of the hymen can be followed down from the lower border of the meatus urinarius until it finally terminates in an abrupt caruncle. This caruncle is caught by a tenaculum or artery-

clamp, and snipped off with scissors, thus serving as a landmark to indicate the outer boundary of the denudation. Then the caruncle on the opposite side is sought and treated in the same way. A point is now selected which marks the highest border of the rectocele, and a bit of mucous membrane is snipped off by scissors to mark its site. This point on the rectocele is then connected with the outer landmark by an incision made by drawing a scalpel from one point to the other, and extending through the mucous membrane. A similar incision is made upon the opposite side, and then a third, connecting the two outer landmarks by following the curve of the mucocutaneous juncture, and completing the outline of the denudation. This large, triangular flap is dissected off in one piece by stripping it from the underlying tissue with the handle of a scalpel. It is best to begin the denudation near the outer landmarks, as the line of cleavage can be easily found at this location. Thus, by catching a point of the flap between the thumb and index-finger and setting it free a short distance and rolling it toward the axis of the vagina over the finger, the underlying tissue can readily be stripped off by successive short strokes with the handle of the knife, keeping constantly in mind the fact that the operator must closely hug the mucous membrane.

In cases in which the flap has been carefully outlined and the above method of removal followed, it is no unusual experience to remove the flap in one and a half to two-minutes' time. This denuded surface corresponds very closely to that described in the Hegar operation. The point of originality consists almost exclusively in the manner in which the stitches are passed. Catching the tissues at the upper part of the rectocele with an artery-clamp, which is elevated by the hand of an assistant, and with the index-finger of the left hand in the rectum, the needle is inserted about one-fourth of an inch from the angle of the denudation. Passing through the mucous membrane, the needle is swept out toward the side of the pelvis and gradually curved toward the median line until it emerges near it, and about an inch and a half down the rectocele. It is then withdrawn, and again inserted about one-eighth of an inch on the opposite side of the median line, and swept back through the tissues in a reverse direction until it emerges upon the mucous membrane at a point equally distant from the angle of denudation and corresponding with the point of insertion. A second stitch is inserted about a quarter of an inch further down the edge of the mucous membrane, and made to pursue a course corresponding to the first suture.

In inserting these sutures they should be passed

sufficiently far down the rectocele to carry it entirely up into the vagina when the sutures are tightened. The two or three succeeding sutures which are similarly passed bring together the separated edges of the muscles and fasciæ in front of the rectocele. The last suture is inserted just above the position of the caruncle, which was removed on one side, swept down around the entire circumference of the denuded surface, and made to emerge above the site of the corresponding caruncle on the opposite side. To understand the action of the sutures as inserted in this method, the fact must be borne in mind that the vaginal mucous membrane and underlying fasciæ through which the two first sutures are passed afford a more resisting tissue than that which makes up the rectocele. Therefore, when these sutures are tightened, the line connecting the point of exit and insertion of each suture near the median line of the rectocele is drawn up under a line connecting the points of insertion and emergence in the mucous membrane, and thus, to that extent, lifts upward and backward the rectocele. The same principle applies to the remaining sutures, so that their combined effect is not only to unite the torn borders of the muscles and fasciæ, but at the same time to lift the anus upward and forward and so restore it to its normal position. The last suture surrounds the edges of so long an incision that these margins will usually be found to gape a little along the line from the point of insertion of the last stitch to the bottom of the fourchette. To secure primary union and prevent the secretions from entering this little gap, it becomes necessary to insert one or two superficial silk or catgut sutures at this point. The entire strain, however, is taken by the sutures which are passed through the mucous membrane of the vagina.

It will be noticed that the sutures, instead of being passed through the skin, as is the case in Hegar's operation and also in that of Emmet, are inserted in the mucous membrane of the vagina, and take their points of support from the fasciæ, thus lifting the rectocele and the anus instead of dragging them down, as is true of the operations mentioned. This method of passing the sutures seems to me not only mechanically more nearly correct than others, but also has the additional advantage of not causing pain. The suture material which I prefer is silver wire, about No. 25, which is inserted by hooking it into a carrying-thread of silk attached to a strong, straight needle.

When the laceration involves the sphincter ani and the anterior wall of the rectum, the tear in the rectal wall is first closed by interrupted catgut sutures which unite merely the mucous membrane of the rectum. In closing this tear the sutures should be continued from the upper angle down beyond the outer border

of the torn ends of the sphincter muscle, which are indicated by dimples in the tissues on each side. Of course, the denudation of all the parts to be brought together in the perineal operation is made previous to the insertion of this suture. The silver-wire sutures are now passed, as previously described, with the one exception that the two final sutures are both made to include the ends of the sphincter muscle. Previous to passing any sutures, however, the sphincter muscle is grasped between the thumb and finger of both hands and stretched as much as possible in order

FIG. 3.



Showing method of insertion of sutures.

to secure as large an anal opening as the length of the muscle will permit.

If, after tightening the sutures, the orifice of the anus seems too small, it is my custom to insert a bistoury at the posterior edge of the muscle and divide it subcutaneously clear across its entire structure. This affords sufficient patency to the orifice and at the same time does not interfere with the function of the muscle in maintaining fecal continence after healing has occurred. The explanation of this latter fact is as follows: It is a common experience with all surgeons to find that the sphincter ani can be completely divided in cases of fistula in ano, not only in one direction, but even in two, and the function of

the muscle not be interrupted after recovery provided the incision in the muscle is not made *anteriorly*. If this provisional incision is made in the median line anteriorly, the same consequences follow as in rupture of the perineum during parturition, *viz.*, the transversus perinei muscles separate, retract into the deeper structures, and so draw apart the two divided ends of the sphincter that it becomes impossible for them to unite.

After-Treatment.—The after-treatment is comparatively simple. As a rule no anodyne, or sedative is required. If the patient is uncomfortable, she can be relieved by changing her position. The open bowel treatment is employed. This is accomplished on the second day after the operation by giving Seidlitz powders in divided doses every half hour until four doses have been taken. When the laceration has extended into the rectum, all rectal injections are prohibited. The patient is kept upon a liquid diet, consisting of soups, broths, hot water, etc., during the first two days, but no milk is allowed. After the bowels have been freely opened the patient is allowed a small quantity of meat, such as chops, steak, roast-beef, with toasted bread. No vegetables are permitted. Every morning a dose of Apenta water is given, and a free, watery evacuation of the bowels secured. Apenta water acts especially well in these cases.

A self-retaining catheter is usually inserted into the bladder at the close of the operation, and left there two days. Through this the urine is allowed to escape every six or eight hours. After the second day the catheter is removed and the patient is usually able to void urine naturally. The parts should be bathed after each urination. The stitches are not removed until the tenth day, and the patient is kept in bed until the seventeenth day.

TUBERCULOSIS.¹

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WHEN it is considered that at least one-seventh of all people die of some form of tuberculosis, it is no wonder that so much earnest attention has been paid to the etiology, pathology, and treatment of this disease. All must agree that it is one of the most dreaded, and, unfortunately, most common and widely spread diseases to which mankind is subject. It is an erroneous idea to think for a moment that it is a modern disease. We know that it has persisted through the ages. For many generations before the discovery and use of the microscope tuberculosis was not always clearly differentiated from cancer.

Nevertheless, there are unmistakable signs of its existence in the early literature of medicine. We not only find it described in medical works, but also know that in some of the old countries in which its ravages were great, laws were passed providing means to be taken for its radical prevention.

Men of keen insight and close observation have believed for ages that tuberculosis was of parasitic origin, and that the time would come when its true cause would be discovered, when some form of treatment would be known with which to successfully combat its terrible inroads upon human life. The first object has been undoubtedly and satisfactorily accomplished. Of the second we cannot speak so assuredly, but still we have much to be thankful for in this direction.

Many experimenters, especially Klebs, Villemin, and Conheim were on the verge of the discovery of the specific bacillus, but its successful demonstration remained for Professor Koch of Berlin, who wrote so accurate a description of the organism and the lesions which it produces that it became comparatively easy to satisfactorily isolate and study the specific bacillus of tuberculosis.

It has long been known that tuberculosis was an inoculable disease, but it is only since 1883 that Koch and his pupils were able to demonstrate that a specific organism could be separated from tuberculous tissue and cultivated outside of the body, the cultivated organisms having all the characteristics of those found in the tissues, and that when introduced into certain animals, this organism was capable of producing tuberculous disease, the organism again being demonstrable in the new tuberculous deposits.

One of the great hindrances to the study of this bacillus was for a long time the inability to color it with anilin or other nuclear stains. Baumgarten made the first real advance in this direction, but while he was working out his method Koch completed some investigations by which he proved that by the addition of a small quantity of an alkali to the anilin stain the dye was rendered capable of penetrating the resistant outer membrane of the tubercle bacillus. It has since been found that some other agents have the same property of acting as a mordant, of which thymol, turpentine, and carbolic acid may be given as the most important. The next essential step was taken when it was found that the tubercle bacillus differed from others in that it most tenaciously retained the staining reagent, even the strong mineral acids not being sufficient to at once remove it, as they do from other bacteria and nuclei. In sputum or sections a most beautiful differential staining can be obtained as a result of this fact. The stained tubercle bacilli are seen as delicate rods or

¹ Third Prize Essay, MEDICAL NEWS' Prize Contest.

threads, generally slightly curved, being in length from 1.5 m to 3.5 m, and about 2 m in thickness, although these dimensions may greatly vary. The bacilli quite commonly occur in pairs, and may be in apposition end to end, usually overlapping somewhat, but not attached to each other. At first it was claimed that they did not contain spores, but afterward Watson Cheyne taught that from two to six spores could frequently be seen in these rods. It is quite common to observe a peculiar beaded appearance in the bacilli when they are contained in pus and sputum, due to contraction of the protoplasm within the resisting capsule, at least this is the general opinion. Some have thought that these fragments were bacilli in the stage of sporulation, though at the present time it is generally believed that the bacilli do not contain spores. It has been repeatedly demonstrated that the spaces between the bacillary fragments cannot be stained as can the spores of other species of micro-organisms. It has also been shown that these degenerative forms do not stand the heat test for spores. The tubercle bacillus is not motile and does not possess flagella.

Many modes of staining the bacilli have been advised, but none are better and few as satisfactory as that known as the Koch-Ehrlich method. The formula for the staining solution used in this method is as follows:

Anilin	4 parts
Saturated alcoholic solution of gentian violet,	11 parts
Water	100 parts.

The prepared cover-glass is to be floated smeared side down, upon, or immersed smeared side up, in a small dish of the solution, and placed in an incubator and kept for twenty-four hours at about the temperature of the body. When removed from the stain it should be momentarily washed in water, and then, alternately, in a twenty-five to thirty-three per cent. solution of nitric acid and a solution containing sixty per cent. of alcohol until the blue color of the gentian violet is almost entirely lost. Ten to thirty seconds is long enough for this washing. After a final thorough washing in a solution containing sixty per cent. of alcohol, the specimen may be counter-stained in a dilute aqueous solution of vesuvin. Then wash in water, dry, and mount in balsam. The tubercle bacilli will appear a dark blue, while the other material, having been decolorized by the acid, will be colored brown by the counter-stain. To be successfully practised this method requires at least twenty-four hours.

Many physicians in active practice, and who simply desire to know as quickly as possible whether the sputum contains bacilli or not, prefer a shorter method. Under such circumstances

Ziehl's Carbol-fuchsin is an excellent stain, the formula for its preparation being as follows:

Fuchsin	1 parts
Alcohol, 95 per cent.	10 parts
Five per cent. aqueous solu'n of phenol crystals,	100 parts.

After having the cover-glass spread with sputum, dried and fired, and held with a pair of cover-glass forceps, from a pipette carefully drop the staining solution on the glass until the surface is completely covered, then hold it over a Bunsen-burner or spirit lamp until vapor is seen to rise from it, and keep it at the same temperature five or six minutes, dropping on more stain from time to time if necessary to keep the glass covered. Now, wash the glass in water and absorb the excess of stain with blotting-paper, and then wash in a fifteen-per-cent. solution of sulphuric acid, or a solution containing twenty-five per cent. of nitric acid for a period not to exceed thirty seconds. Some recommend stronger solutions of acid, but I have found that weaker ones act more satisfactorily, especially in the hands of beginners. The acid is washed off in water and the specimen dried and mounted in balsam. Nothing will be colored except the tubercle bacilli, which will be red. Before mounting, the specimen can be lightly stained with an aqueous solution of methyl-blue if a counter-stain is desired. This makes a very pretty picture under the microscope. There are many other methods of staining, but it is much better for the beginner to adopt some method similar to the above and use it continuously until he is perfectly familiar with it. It is also necessary to remember that the bacilli will not be found in every suspected sputum or tissue, and the examiner should not permit himself to be led to imagine that tubercle bacilli are present when they are not clearly visible.

As before indicated, the association of this organism with tuberculous disease is undoubted; it is found in the lungs and sputum in various forms of consumption, in the kidneys and urine, also in tuberculous ulcers of the intestine, around the vessels in the tuberculous inflammations of the membranes of the brain, especially in children, and also in tubercle of the liver. Briefly, no organ of the body is free from the possibility of invasion by the tubercle bacillus. The most common mode of infection is through the respiratory tract, and the most frequent seat of the disease is in the lungs, usually beginning at the apex. Most frequently the bacilli gain entrance into the body by being inhaled in air which contains dried tuberculous sputum pulverized into dust. If the invading organisms find a congenial soil in a catarrhal mucous membrane, for instance, or the vital powers of the patient are so low that phagocytosis is not active, they will rapidly multiply, and soon give evidence of their presence in the

dreaded disease of which they are the cause. The alimentary canal is the next most common channel of infection. This occurs in various ways. The bacilli may be taken with the food, as in improperly cooked tuberculous meat, or they may be swallowed with sputum containing them, in either event passing through the stomach unaffected when the gastric functions are performed with diminished activity. It has been quite satisfactorily demonstrated that when the gastric juice is in a normal condition its action upon the bacilli will prevent their further growth or reproduction, at least to a very great degree. In children, especially, the intestinal tract is frequently invaded, either producing tuberculous ulceration of the intestine or tubercles in the neighboring glands. Many children die from obscure diseases in which the physician is greatly puzzled as to the diagnosis, when if the facts became known, tuberculous disease would be found to be at the bottom of the difficulty.

A very common medium of infection is through the use of infected milk. Much attention has been given to this subject abroad, and in some countries a very complete system of milk inspection has been instituted in order to protect the people from infection through this source.

Treatment. — All accessible tuberculous glands should be removed as soon as possible. In tuberculosis of any of the internal organs a general supportive treatment should be instituted, combined with much out-door exercise in the sunshine. I will not enter into details relative to treatment, but suffice it to say, that glycerin, wine of cod-liver oil, oleomargarin, creosote, the phosphates, guaiacol, and sometimes whisky, are among the most valuable therapeutic agents. As yet no antitoxin has fulfilled the expectations of the clinician. I believe, however, that one will eventually be found which will greatly advance the treatment of this disease.

There is an agent, however, which I think promises much, especially in tuberculosis of the lungs. I refer to formalin. I have never seen it recommended, but we all know of its wonderful germicidal powers. In a culture-tube in which tubercle bacilli are growing, a few drops of formalin placed on the cotton in the end of the tube will, through the vapor given off, cause their destruction. It is also well known that it is very important in the treatment of tuberculosis to keep the air-cells in the lungs well dilated. With any good inhaler in which hydrogen dioxid can be used as the means for supplying oxygen, a sufficient quantity of formalin may be added to make a solution of a strength of 1-1000 or 1-1500. With this apparatus the vapor of formalin, mixed with oxygen, can be deeply and slowly inhaled; thus

at the same time thoroughly expanding the lungs. The treatment should be applied twice daily, and continued ten or fifteen minutes at each sitting. By these means faithfully applied in the incipency of the disease I believe all cases of tuberculosis of the lungs may be very much relieved and the patients' lives made more comfortable, while in quite a large per cent. there will be permanent cure. I especially desire that the readers of this paper will try the formalin treatment and report their results. In conclusion, I believe that a consumptive patient will derive great benefit by sitting a few hours each day in a room in which a formaldehyd generator is in operation.

SUTURE OF THE CLAVICLE FOR SIMPLE FRACTURE.¹

By E. M. FOOTE, M.D.,
OF NEW YORK.

A WELL-BUILT, healthy lad, thirteen years of age, was struck by a heavy piece of machinery upon his right shoulder two months ago. The clavicle was broken by the blow slightly outside of its center. I saw the patient two days after the accident. There was not much pain, but the shoulder had dropped so far inward and downward, the body at the same time being bent toward the right, that the mother of the boy feared he would be permanently deformed. There was only a slight effusion of blood. The outer fragment of the clavicle overlapped the inner by more than an inch, and this deformity could not be wholly reduced. Under these circumstances operative treatment seemed indicated, and the mother agreeing to it, the following day ether was administered and the bone was exposed. It was interesting to note that with the patient in the dorsal position, and with the aid of full anesthesia it was impossible, by manipulation of the shoulder, to draw the fractured ends wholly apart. They still overlapped by a half-inch. The periosteum on the outer fragment was uninjured; that of the inner one had been split anteriorly for about $1\frac{1}{2}$ inches. To this fact is due, I think, the presence of the slight callous which still can be felt — eight weeks after fracture. The ends of the bone were drilled, and a stout kangaroo tendon was passed through them and tied. The periosteum was closed as well as possible by a catgut suture. The wound was sutured over a silkworm-gut drain, which was removed on the second day.

The skin united primarily, but two weeks later a small sinus opened, leading to the bone. This closed again without treatment other than a protective gauze pad. Union is now firm, and the functional result is perfect. There is a minimum amount of deformity, the only noticeable sequence of accident or treatment being a linear scar two inches long which will soon be invisible. The dressing was of the simplest character. The arm was confined for ten days, and carried in a sling for another ten days.

¹ Read before the Surgical Section of the New York Academy of Medicine.

Long confinement in rigid apparatus of a fractured bone in which there is little tendency toward displacement is inexcusable.

A cursory glance at recent literature, shows that an operation of this character has seldom been reported in this country. In Germany, France, and Italy, however, several surgeons have reported cases, and one writer has collected forty-four examples of this operation, all of the patients being cured by it. Owing to its simple character, and the successful healing which now almost always follows a reasonably clean technic, it is somewhat strange that so few surgeons have resorted to this satisfactory method of treating what is universally admitted to be one of the most troublesome of fractures.

Let it be clearly understood that a bone suture is not advocated as a routine treatment for all cases of simple fracture of the clavicle. Many such fractures heal without treatment, or with a simple body bandage and sling, with little or no deformity. During the past year I have seen several patients who came to the Vanderbilt clinic from a few days to two weeks after fracture of the clavicle, not having had any treatment, and in whom union in a good position was already well begun. But there are other cases in which no apparatus will reduce the deformity, or maintain it in position when reduced. From a study of the reported cases the following reasons are given on account of which suture of the clavicle may be advisable:

1. Irreducible deformity, or one which will not stay reduced.
2. Interposition of muscle between the ends of bone.
3. Pressure upon, or injury to, a nerve.
4. Injury to a vessel, causing a large hematoma.
5. The protrusion of a sharp piece of bone to the skin.
6. Cases of compound fracture would naturally be treated by suture.
7. As a secondary operation suture is required in cases of continued pressure on the nerves, as shown by pain or paralysis; and also in cases of non-union.

The results of the late operation are not apparent as soon as when operative interference has been at once instituted, but nevertheless they are good. Most of the reported operations have been performed with silver wire, a few with silk, but none, so far as I have been able to observe, with an absorbable suture. There seems to be no good reason why the last-named material should not be employed and the patient thereby spared the possibility of future trouble with the suture material. Some writers have advised the removal of the wire within four or five weeks; others leave it permanently.

Kinnarnen recommended that both bones be bored through with an awl and a peg inserted. Postemski treated several oblique fractures by binding a wire around them as a broken spar is lashed. This method is certainly the most clumsy of all. Hassler says that only fractures of the middle third of the bone present difficulties, but as this includes two-thirds of all cases the remark is not very significant.

Those who are interested in this subject will find the following references of value:

Langenbuch (*Deut. med. Wochenschr.*, No. 5, 1882) wired a fracture with success.

Whitson (*Brit. Med. Jour.*, vol. i, 1883). Patient, a boy, aged fifteen years, who had been run over; compound fracture about the middle of the clavicle. The ends of the bone were smoothed, and one week later were wired. The wire was removed within three weeks, it being already loose, and the union was good.

Poirez (*La Sem. Méd.*, No. 2, 1891) operated upon a patient to avoid pressure upon the brachial plexus. A good result followed.

Ninni (*Gir. Internaz. d. d.*, Professor Cantani, No. 9, p. 333, 1892) operated once on account of great deformity. Result good.

Routier (*Bull. et Mem. de la Soc. Chir.*, p. 664, 1894). Operation upon a young woman to reduce deformity caused by interposed fragment; silk suture of bone; suture of periosteum; good result.

Mauclaire (*Cong. Fr. de Chir.*, p. 516, 1894) had a patient, female, aged twenty-one years, with a fracture of the outer half of the clavicle. It was dressed in a Desault bandage. Three weeks later there was a large callous and paralysis of the arm due to pressure on the brachial plexus. Incision; removal of callous and a spicule of bone; suture of bone with silver wire; of periosteum with catgut; primary union; paralysis disappeared within two months. After the operation electricity and massage were applied. Direct injury of the plexus in simple fracture has been reported by Earle, Charier, and Mercier, and in compound fractures by Gibion, Gross, Hamilton, Boone, and Chipault. Indirect injury of the plexus may be due to effusion of blood and cicatricial contraction (Hilton) or to callous (Polaillon, Chalut, Chipault, and Mauclaire).

Postemski (*Del. R. Acad. d. Rom.*, xiv, p. 46) reported six cases, all acute, and all in the outer half of the clavicle. In some of them drilling and wiring was done, and in some the fractured ends were wrapped with wire. In all treatment was successful.

Demons (*Cong. fr. de Chir.*, p. 620, 1895) advocated operation for deformity, pseudo-arthritis, vicious callous, wound of a vessel or nerve, injury of the skin, and in comminuted or compound fractures. He reported five successful cases in which silver wire was buried, a light dressing applied, and the arm moved after a few days.

Reboul (*Cong. fr. de Chir.*, p. 620, 1895) sutured two comminuted (not compound) fractures of

the clavicle in patients aged sixty and sixty-three years, respectively, with good results. Silk was used. In one case loose fragments of bone were removed.

Smits (*Centralbl. f. Chir.*, p. 566, 1896) wired a fracture of the inner half of the bone caused by direct violence in a male aged eighteen years, with perfect results.

Davis (*Ann. of Surg.*, p. 147, vol. 23, 1896) operated with entire success eight weeks after fracture for incomplete union, persistent pain, and paralysis. Silver wire was used and removed within seven weeks.

Fevrier (*La Sem. méd.*, p. 433, 1896) says that he collected forty-four cases in which operation was successfully performed. The only disadvantage of operation was the anesthesia of the front of the chest resulting from the incision. In thirteen instances troubles referable to irritation of the nerves were relieved by an immediate operation. The results after a late operation are not as prompt and the operation is more difficult, but in these cases also the results were satisfactory.

Spencer (*Am. Jour. Med. Sciences*, p. 445, 1897) reports two cases due to indirect violence, occurring in young men, in both of which wiring was successfully performed by Hearn.

The other articles to which reference has been made are:

Kinnarnen, *Jour. Am. Med. Assoc.*, p. 116, 1892.

Hassler, *Lyon. Méd.*, Nos. 2 and 3, 1896.

Franklin, *Ann. of Surg.*, p. 716, vol. 25, 1897.

WAR ARTICLES.

NEWS OF THE WEEK.

AMONG the many lessons taught by the Civil War of thirty years ago, one of the most important was that showing the necessity for broad, earnest study of military medicine and surgery. At that time the entire available supply of medical literature for army use consisted of a library of less than 400 volumes in the Surgeon-General's office.

The great importance of a prompt and substantial improvement in this direction is amply evidenced by the action of Congress, which even in those days of financial depression appropriated \$5000 yearly to be used for the purpose of compiling a "Medical and Surgical History of the War." This work was begun in 1865 under the personal supervision of Dr. John S. Billings, by whose wise and far-seeing management it was merged into the National Medical Library, which at this date contains 120,000 bound volumes, nearly double that number of pamphlets, and atlases, engravings, charts, and plates in almost endless array.

Our army and naval medical men now have access to what is admittedly as complete a collection of

medical and surgical literature as can be found in the world.

A most convenient and valuable addition to the soldier's equipment is the "first-aid-to-the-injured package" recently adopted by the War Department. The packages are four inches square by one and one-half inches thick, and contain antiseptic bandages, compressors, etc. The War Department has contracted for 100,000 of these packages.

The question of an insufficient supply of pure water at Key West is one which may well be viewed with serious apprehension. We quote from *The (New York) Times* as follows:

Key West's water-resources are most primitive and limited. Every one is afraid to drink water from several shallow wells in town, all being more or less brackish and under suspicious surface drainage. Two companies, at various times, have driven artesian wells 1800 and 2300 feet deep, but they have never secured fresh water. The town lives by cisterns and rain-barrels, and the latter are only a shade less unhealthful than the wells. These cisterns are filled during the rainy season, and usually run very low by the close of the dry season, which is due now.

This year, in addition to the rains coming very late, the town has practically had its population doubled by the presence of troops, ships, and war vessels, and the army of newspaper correspondents and their tugs, which vessels take water by the thousand gallons for their boilers and crews. Of course, the war vessels and some of the hospital and other craft have condensers, but the drain on the town's supply is still abnormal.

The large condenser (said to have a capacity of 40,000 gallons daily) which was to have been erected by the Government and in operation by April 21st, has not, at this writing, arrived at Key West, and the situation grows more serious every day. A water famine is almost appalling to consider in connection with an army of soldiers, and the risk of impure water with its train of diseases is still more to be dreaded.

The Medical Department U. S. A. is evidently making extraordinary preparations for the care of the Cuban invading army. The daily papers report the supply of quinin at 135,000 grains, put up in capsules of 3 grains each. Fifty-four ambulances were ready in Key West on May 10th, and on May 18th one manufacturer alone shipped seventeen carloads of new military ambulances to Mobile.

Other medical stores are ready in the same abundant proportion, and the Government appears to be using every precaution to meet what might prove the most dangerous ally of the enemy.

In regard to some customs, it will doubtless be well for our soldiers to paraphrase the old saying,

and "When in Cuba do as the Cubans do." The New York *Evening Post* says:

The War Department has given orders for 10,000 hammocks, to be delivered immediately. It is stated by experienced men that the hammock is an absolute necessity in a Cuban campaign, and it is the only way to escape the vermin and the fatal dampness of the soil. It is thought that the hammock will be finally adopted for the full army of invasion.

We have long been accustomed to associate the sailor with his hammock and the soldier with his blanket, but the innovation now suggested is supported by sound reason, and will doubtless go a long way toward preventing sickness and death in the ranks.

The large steamer "John Englis" has been purchased by the Government from the Maine Steamship Company, and will be fitted up as a hospital ship. It will require about three weeks to put her in proper condition for this purpose, and her large size (300 feet long, 46 feet beam, and 3000 tons) will admit of a refrigerating-plant, a distilling-apparatus, and a machine for making carbonated waters, etc. The boat has a speed of fifteen knots, and it is the purpose of the War Department to use her for transporting sick soldiers to permanent hospitals as well as for regular hospital purposes. She will be in charge of Major George H. Torney as surgeon-in-chief, with five assistants. A corps of six women nurses from Johns Hopkins Hospital, Baltimore, will also be carried, not as recruits, but as civilian employees.

The story so widely circulated in the daily papers of the arrest of three men at the Chickamauga camp with arsenic in their possession, presumably to be used for poisoning the water used for drinking-purposes by the soldiers, has been authoritatively pronounced an invention pure and simple. Such a catastrophe would be well-nigh impossible, as the wells which furnish the water-supply are constantly guarded to prevent not only pollution but waste.

YELLOW FEVER; HOW IT IS REGARDED AT CAMP TAMPA HEIGHTS.

BY HENRY I. RAYMOND, M.D.,
CAPTAIN AND ASSISTANT SURGEON, UNITED STATES ARMY.

I AM indebted to my colleague, Surgeon Samuel Q. Robinson, United States Army, who has recently arrived in camp by way of Mobile, for notes taken by him during an informal lecture given, by invitation, before a small gathering of medical men especially interested in the subject of the *practical* management of yellow fever, and being the latest words on this important subject, from the lips of Surgeon

Murray of the Marine Hospital Service, in charge for many years of Southern quarantine-stations.

On the first intimation of the fever give the patient three or four improved compound cathartic pills. These are preferable to a solely calomel purge, as the latter requires six hours to act, while the compound cathartic pills will usually act within three hours, and they contain sufficient mercurial. As soon as possible give a hot-water bath; if this is impracticable have recourse to a blanket or sheet wrung out in hot water for enveloping the body, thereby inducing profuse diaphoresis. Follow this by some antiphlogistic coal-tar derivative, with soda and caffeine. Caffein is the proper heart stimulant for the first stage. Sulphate of soda is preferable to the magnesium salt, as being less griping. Coal-tar products are indicated if fever is above 102° F., and for the boring pain through the temples. If the fever persists about 102° F., repeat the coal-tar products at intervals of from three to six hours.

For the first movement of the bowels, the patient may sit up; the evacuation is thought thereby to be more complete; after that, the bed-pan should be used. If the bowels are not relieved in six hours, give a saline, or castor oil if it can be borne. Lemon juice is recommended as a vehicle for the oil.

As refreshing fever drinks, employ ginger-ale, hot lemonade, or small sips of ice water, or bits of cracked ice; no spirits. Sago or mush, composed of well-cooked, boiled hominy, or corn-meal, may enter the dietary when the stomach can retain them.

For the relief of nausea, rub ice rapidly about the neck, lips, and temples, or give cocain in 0.016 gram (gr. $\frac{1}{4}$) tablet-form; wash rapidly down the throat. As a pleasant draft for this purpose, or as a fever drink, use any flavored (orange) water. It is better retained than plain water; the orange grows everywhere in the South, and anybody can prepare this flavored and much-favored drink. When giving fluids to a fever patient, administer in a glass just the quantity you wish him to take.

If albumin appears as a trace in the urine, give more liquids. If the albumin increases, especially after sixty hours, administer turpentine in 10-minim doses, every four hours. Dropping the turpentine into a spoonful of water is as good a way as any to combine it for administration.

For sleeplessness make use of sulphonal. Chloral and the bromids are useful, but sulphonal is the best hypnotic in yellow fever.

In collapse an enema of turpentine and whisky is indicated. Hypodermatic injections of strychnin sulphate are useful.

As nutrition, liquid preparations of farinaceous foods alone are best for at least five days. Milk and

eggs are regarded as poison at any stage of the disease.

Always keep the patient protected by a covering. This fever is so commonly complicated with malaria that Surgeon Murray makes quite a routine practice of giving 4 grams (grs. lx) of quinin sulphate during the first twenty-four hours of the attack, and then further withholds this specific altogether. The patient ought to be back on duty at the expiration of eleven days.

The only hours during which it is at all prudent to be on the streets in a town where yellow fever is prevalent are between 9 A.M. and 3 P.M. Surgeon Murray affirms that it is practically safe for a non-immune person to visit the shops between these hours if he does not go into dwellings where yellow-fever patients are housed. On the other hand, it is his conviction that a non-immune going into town before 9 A.M., or after 3 P.M., will almost certainly contract the disease. He knows of no medicinal preventive.

Dr. John Guiteras, Professor of Pathology in the University of Pennsylvania, who has been assigned to special duty with the Chief Surgeon of the United States Forces at Tampa, as adviser on yellow fever and other tropical diseases, when seen recently at the Tampa Bay Hotel, cordially gave me his views on yellow fever, with permission to use his notes as I deemed proper. He frankly differs in some particulars with Surgeon Murray's views as expressed above, especially in regard to the supposed immunity conferred upon persons visiting the shops of an infected locality during and only during the high noon hours. He is strongly opposed to the prevailing opinion that yellow fever is contracted usually at night. During last year's epidemic he made it a point to find out in the affected Southern cities what kind of people were first affected, and he found that the disease never broke out among the night-watchmen. He did not find a single case among these. On the other hand, he has seen many outbreaks of the disease among people who moved out of the cities during epidemics and came into town only during business hours. It is not so much a question of time of day or night as it is one of duration of exposure.

If our troops are sent into Cuba his advice is to locate our forces, if possible, in the interior of the country, or if along the sea coast, then in small places or near small harbors. Probably nine-tenths of the territory of Cuba is free from yellow fever; in fact, this fever is circumscribed and confined to the populous cities of the seaboard. Small harbors are free from this pestilence, and if we can quarantine our camps against the populous cities of the coast,

there is no reason why they should suffer from yellow fever.

How this fever is transmitted or admitted into the system is still unknown. The drinking-water has nothing to do with the case. The poison may possibly be conveyed in food, in air, or by insects.

The treatment is largely symptomatic. The bowels should be kept free; coal-tar products are useful for pain, distress, and sleeplessness; but not for the control of temperature. In suppression of urine, the form of treatment generally employed in such cases under other circumstances is to be recommended. There are some special advantages found in calomel as a diuretic, in doses of 0.2 gram (grs. iii). It stagnation of the circulation and tendency to hemorrhage present themselves, resort to the old tincture of the chlorid of iron. Carbureted waters are very agreeable to the patient. Alcohol cannot be used in yellow fever in the large doses we employ it in typhoid fever and pneumonia. The diet should be extremely light during the first three or four days of the disease; practically, nothing at all.

There is no disease in which the mortality varies so greatly as in yellow fever. It is to be expected that the mortality in cities should be lower than among soldiers, because mortality is relatively so low in children, who constitute a large proportion of the population of cities.

With respect to serum-therapy in this disease, the experience with the serum of Sanarelli, as reported by himself in a lecture recently given in San Paulo, Brazil, is not at all encouraging.

The diagnosis can be made with great positiveness. Among a group of symptoms almost pathognomonic, there are the peculiar facies, albumin in the urine, and the discrepancy between the pulse and temperature.

Dr. Guiteras is a Cuban born, familiar with the topography and climatic conditions of his native country, and by long experience and study is peculiarly adapted for the mission in which his heart and mind are enlisted.

THE SANITARY REDEMPTION OF HAVANA; THE NEED AND THE MEANS.¹

By GEORGE HOMAN, M.D.,
OF ST. LOUIS.

THE Harbor of Havana, or Habana, received its distinctive name (the Haven) because of the exceptionally safe refuge it afforded the sailing craft of earlier times from the stormy seas and tempests of that latitude. It is a land-locked bay, deep, spacious, easy of access, and well sheltered on all sides. Its general direction is from

¹ Abstract of a paper read before the Medical Society of City Hospital Alumni, May 5, 1898, and published from advance sheets furnished through the courtesy of *The Medical Review*, St. Louis.

southwest to northeast, while the outlet points about northwest, this passage being less than one thousand feet wide and about four thousand feet long. With the exception of some arms, or inlets, that reach in different directions the main bay, or harbor proper, may be likened roughly to a bottle or narrow jug with the neck set on the shoulder in an oblique direction.

There are no streams of large size flowing into the bay, the Gulf tides are inconsiderable (only about two feet), the sewage and surface drainage of a large population have been poured for centuries into the almost stagnant basin, and with a temperature seldom falling below 70° F., and when it does the fall being of too brief duration to affect either soil or water, the conditions afforded for breeding and storing disease are well nigh perfect. It is, indeed, a huge cesspool festering in sub-tropical heat. To borrow the terms of house-drainage as applied in modern dwellings, Havana practically presents to the world trading in its port the conditions that would follow the continued use of sanitary conveniences in a residence where only the most scanty means of flushing were provided.

The situation, in so far as it relates to the genesis and spread of yellow fever, is the result of maladministration, for while the local configuration is peculiar in affording an especially safe refuge for shipping it has become through sanitary neglect an equally snug harbor for a particular disease, so much so, that for more than half the year it is deemed unsafe for any unacclimated or susceptible person to visit there. The danger that attends intercourse with this seaport is so great that the chief commercial nations have recognized it for many years, and special precautions are observed by their shipping in order to lessen the risks incurred.

During the centuries when the slave trade flourished Havana was the principal mart for the traffic, reputable writers stating that for many years not less than one hundred ships annually discharged their human cargoes at the wharves. Aside from other potent influences the pollution of the harbor from this source was extensive, and as no means were employed to freshen the waters of the bay it is not surprising that the place became the mother city of the most fatal infection having restricted geographical range of which our profession has present knowledge. Depots or centers of yellow fever were developed at other Cuban points and in other islands of the West Indies, and on the mainland along the Atlantic and Gulf coasts, but it is believed that these all reached back, directly or indirectly, to Havana as the principal source.

The growth of knowledge, with increased skill in sanitation as applied to seaports, shipping, and cities in the countries and colonies surrounding the Spanish islands has served to thrust back the disease toward its original habitat. Except as an occasional visitor it is now no longer known in this country. To the westward, Mexico has very nearly freed herself from the disease as an endemic, an important change having been effected at Vera Cruz in this respect, as late reports show; to the southward Jamaica and other British colonies have substantially rid themselves of it except as it may be brought in by shipping, and the same condition is reported of the

Danish islands to the eastward, so that north of the equator Havana stands as the chief source of this peculiar form of danger to the trading nations of the world; and from them has gone forth the demand that an end shall be put to a state of affairs that is a perpetual menace to health and life in those waters.

Yellow fever being essentially a disease of sea level, thriving best in combined moisture, filth, and heat, clinging especially to the foreshore, wharves, docks, ship-holds, etc., Havana presents special conditions for its growth and harboring, and, therefore, requires special means for its eradication. This implies one or two things, to wit., either that some method shall be found by means of which the waters of the bay will be regularly and frequently changed—flushed out thoroughly as a catch-basin should be—or else that the pollution now poured into it shall be diverted and safely disposed of elsewhere.

These propositions necessarily raise questions of engineering and finance, but there is no reason to doubt that every difficulty can be overcome, as the normal commerce of Havana is of such magnitude, and under changed administrative conditions would be so greatly increased, that the financial cost of the work necessary for the regeneration of the port, if wisely undertaken, could be easily carried and met.

As already pointed out the main sanitary problem hinges on the possibility of either keeping the waters of the bay clean by frequent changing, or by cutting off the dangerous contamination that now enters it. To effect the former it has been proposed to cut a canal leading from the bay to a point on the north coast with a view to establishing a current toward the Gulf. But I am not sufficiently informed concerning the local topography to say whether or not this would be likely to achieve the desired end. It has been claimed that a work of this kind in one of the seaports of the Danish islands has proved to be a remedy for like conditions, but still there may have been essential differences in the two situations.

It will be remembered that Milwaukee, in order to overcome the foul stagnant condition of the stream whose course traverses that municipality, several years ago installed a powerful pumping-plant on the lake shore and by this means forced fresh water across the area separating river and lake, and thus started a current in the channel of the former, and it has been suggested that such means established near the Tallapiedra Bay could be employed to force the sewage into the Gulf and thus induce an inward current through the harbor entrance. The other alternative is the diversion of the sewage now delivered into the bay and its disposal elsewhere without prejudice to public health. This would involve the construction of an intercepting sewer along the water front to receive the outfall of drains carrying domestic and manufactured waste, and is a measure so commonly resorted to that no novelty presents itself in connection with the suggestion. Generally, the adoption of such a sewerage scheme requires in connection with it the operation of receiving-basins and pumps to overcome adverse gradients, or for delivery of the sewage to its final destination whether into the open sea, or for irrigation purposes.

The construction of an intercepting sewer as suggested would probably eventually lead to a renewal of the drainage system of the entire municipal area, such as was accomplished at Memphis, whereby the sewage proper or house-drainage would be cared for apart from the rainfall, and the initial cost of the reconstructed work thus greatly reduced.

From a sanitary standpoint there would appear to be no objection to allowing the rainfall from the municipal surface to continue to flow into the harbor, if proper scavenging was regularly performed, but provision for subsoil drainage would be necessary, and, preferably, in connection with the sewerage system on the score both of economy and efficiency. Wherever the condition of the ground demanded it subsoil drains should be laid below and in the same trenches with the pipes carrying the sewage and a dry sound condition of the subsurface assured in this way.

To a progressive commercial world doing business by clean methods in clean ships, and desiring exemption from unnecessary risk in so doing, such a condition became intolerable when it was seen that problems akin to this elsewhere were successfully grappled with and solved, and the time was deemed ripe for the abatement of what in fact constituted a gigantic international nuisance. The safety of our own people is yearly put in too great jeopardy while things continue as they are, and with the present hopeful outlook for a radical change of régime in Havana and Cuba—political, racial, and economic—it may be fairly assumed that there are those now present here who will live to see the day when yellow fever will become practically a lost disease, and the deliverance of its present citadel from this form of pestilential dominion be duly chronicled as one of the victories of peace and science not less renowned than those of war.

CLINICAL MEMORANDUM.

REPORT OF AN UNUSUALLY SEVERE CASE OF DIPHTHERITIC PARALYSIS, WHICH WAS FOLLOWED BY COMPLETE RECOVERY.¹

By WILLIAM FLITCROFT, M.D.,
OF PATERSON, N. J.

ON November 7, 1897, I was called to treat L. S., aged eight years, suffering from a malignant type of pharyngeal diphtheria. The pseudomembrane was the most extensive I have ever seen. The fauces were completely covered and the nares closed with the exudate, so that breathing was very difficult. Upon entering the sick chamber the foulness of the membrane was very plainly perceptible at the door. The boy was in great distress because of the degree of toxemia already present and the impediment to respiration, although the larynx was not involved. I immediately injected 2000 units of Mulford's extra-potent antitoxin deep into the gluteal muscles, after first scrubbing the surface with antiseptic soap.

During the early part of the following day the child was decidedly better, having passed a good night; but

toward evening, finding him growing worse, I repeated the dose, injecting it into the opposite buttock. On the third day the characteristic red line of demarcation, seen wherever membrane was visible, showed that the disease was fully under control. Exfoliation of membrane soon became quite marked.

Late on the third day I was hastily summoned, to find the first of the series of sequels that greatly impeded the progress of the case. This was epistaxis. Before bleeding was arrested probably as much as one pint of blood had been lost. From this time, however, convalescence was uninterrupted save by the persistence of albumin in the urine for three weeks. Six weeks after treatment for diphtheria had been inaugurated, paralysis was first observed. This affected the left eyelid. Later, in rapid succession, the right eyelid, the muscles of deglutition, and finally both lower limbs became involved. The boy was entirely helpless as regarding swallowing of liquids, and locomotion. He became frightfully emaciated. Counsel was given that he be placed in a hospital ward, and he accordingly was brought to the Paterson General Hospital where, however, he remained but a very short time. Treatment was then given him at his home.

I administered nourishment by means of a stomach-tube introduced through the nose. This was supplemented by rectal feeding. Various efforts to use the stimulants and tonics generally employed in such cases proving futile, sole reliance was placed upon forced feeding. The results were that after about two weeks, to use the parent's words, "He was better than before he was sick." Severe neuralgic pains along the larger nerve-trunks, notably the anterior tibial, were controlled by massage and applications of alcohol.

The most interesting feature of the case aside from the complete recovery, is the fact that the only medicine employed in the case from first to last was 4000 units of antitoxin. Basing my judgment upon considerable experience with diphtheria, embracing eighty antitoxin-treated cases, I am convinced that without antitoxin this patient would not have lived to develop paralysis; and similarly had treatment been instituted earlier, recovery would have promptly followed the initial dose and paralysis would not have resulted.

MEDICAL PROGRESS.

A New Diagnostic Sign of Measles.—KOPLIK (*Medical Record*, April 9, 1898) mentions a new sign of measles which is evident some two or three days before eruption can be seen. It consists of small irregular spots of bright red color which appear on the mucous membrane lining the cheeks and lips. In the center of each spot is a minute bluish-white speck. These specks are so delicate that a strong window light is required to make them out. He has never seen them under other conditions, and when once seen their appearance will never be forgotten. This sign is of especial importance since it occurs before any of the other symptoms of the disease manifest themselves. These spots are characteristic. They never coalesce but always retain their punctate character.

¹ Read before the Passaic County District Medical Society.

Danger of Sudden Changes in the Diet of a Diabetic Patient.—O'DONOVAN (*Maryland Medical Journal*, April 23, 1898) warns against a sudden stoppage of diet containing starches and sugar in case of diabetic patients. He quotes from his own experience the notes of two cases, both of which terminated fatally within five days after the sudden change from a mixed diet to a diabetic one. Both patients were men who, as far as they knew, were in good health up to the time they came to his office for consultation. Neither presented any symptoms that would lead one to suspect impending collapse. Both were passing large quantities of water containing four or five per cent. of sugar. Both were very fond of sweets which they ate in large quantities, as well as bread and other starchy foods. These things were forbidden them and they were put on a strict diabetic diet, with the result that they became suddenly weak and passed into a semisomnolent state, and in spite of stimulants, opiates, and all sorts of concentrated foods, died in less than five days. This accident is not properly described in American text-books and its omission is a very serious fault.

The True Nature of Yellow Fever.—KLEBS (*Journal of the American Medical Association*, April 16, 1898) says that the feeling of blind terror in connection with yellow fever in our Southern States, combined with the cruel shot-gun quarantine, has been productive of much injury and fails to accomplish what it aims at, *viz.*, the prevention of the spread of the disease. It is time that our medieval notions in this respect are given up as has already been done in connection with smallpox and diphtheria, and in Europe in connection also with cholera. It is important, therefore, to understand the manner of dissemination of yellow fever.

In the first place the disease is transported by sick people, and not by goods, and not by water. No known case is reported in which it was imported by the products of the West Indies, Central and South America, and that water does not act as a propagator of the disease is shown by the fact that an epidemic never follows a river downward but spreads upward, as in the Mississippi Valley.

In the second place the personal contagion is not confined to a very near contact. While many individuals in immediate contact with the sick do not contract the disease, there are other instances which show that contagion lingers in the vicinity of a sick person for a long time. Thus, in December, 1897, long after the epidemic in Mobile was extinguished, a workman moved to a house in which there had been cases months before, and which had been cleaned and disinfected. He was there infected and died in a short time. Yellow fever often develops very slowly in certain places so that the nature of the disease is only detected later, when graver cases follow the lighter ones. This was notably true in the recent epidemics.

Klebs does not believe that the bacillus discovered by Sanarelli is the true germ of yellow fever. He could not find it in every case, which seems strange if it is so easily stained and cultivated. Furthermore, Sanarelli's is a pronounced water bacillus, while yellow fever does not seem

to be conveyed by drinking-water. In years gone by different observers claimed to have discovered the bacillus of malaria and to have proved it by injecting it into animals, thereby producing swelling of the spleen, etc. The truth of the matter was that the fluids they were experimenting with contained the plasmodium as well as a bacillus. Klebs believes that yellow fever is due to protozoa which he has succeeded in staining in hepatic tissue from yellow-fever patients as well as in the mucous membrane of the duodenum. He admits, however, that these discoveries must be supported by further examinations, especially of living patients. He looks upon the disease as a gastro-duodenitis set up by these organisms, which find their way from the duodenum into the liver, producing the well-known atrophy. This theory will explain why some cases are mild and lingering, since in them the protozoa remain in the intestine; and other cases take on a virulent aspect when the protozoa reach the liver.

Rumination in Man.—SINKLER (*Journal of the American Medical Association*, April 9, 1898) mentions four cases of rumination which occurred in his practice and gives some history of the literature of this subject. Very few cases of this trouble have been reported, apparently because the habit gives individuals who practice it so little annoyance that they do not consult a physician, or because they are ashamed to say anything about it. It must not be regarded as simple regurgitation or vomiting of the food; it is a return of the food shortly after it has been swallowed, unattended by nausea, retching or disgust. In many cases only the portions of food which need remastication are returned. Regurgitated food is rejected from the mouth or is remasticated and again swallowed. Rumination in man is analogous to the chewing of the cud in certain lower animals. Hasty eating, and imperfect chewing, and drinking much liquid with meals are frequent causes. It may be the result of imitation, as seen in the cases of two children who acquired the habit from a governess and who were readily cured of it as soon as she was sent away. There is generally a neurasthenic condition, and treatment should be directed to the improvement of the general health, and especially of the digestion. Strict attention should be paid to the amount and character of food taken into the stomach and the patient should be cautioned to masticate his food thoroughly.

A Case of Echinococcus of the Breast.—VITRAC (*Centralb. für Gynäkol.*, April 9, 1898) mentions a case of echinococcus of the breast occurring in his practice. A woman, aged twenty-one, noticed about the time of the birth of her first child, a tumor of the breast the size of a hazel-nut, which was movable and painless. It increased so rapidly that five months later she consulted a physician who found a tumor the size of the fist, not adherent to the skin and giving evidence of fluctuation. He assumed it to be a cystic adenofibroma and removed it without difficulty. Microscopic examination, however, showed it to be an echinococcal cyst.

Vaccination by Denudation.—HUTCHINS (*Journal of the American Medical Association*, April 23, 1898) claims

that vaccination may be robbed of its terrors by the application of liquor potassæ to remove the superficial epidermis. Two or three minutes after the application is made the superficial epidermis may be wiped off with a bit of wet cotton, when a moist shining surface will remain without bleeding. The vaccine material is now applied and allowed to dry in the usual manner. The results obtained by this method show that the lymph will "take" as often when applied to a denuded surface as when it is applied after scarification.

Methods of Preserving Eggs.—A writer in *Food and Sanitation*, February 12 1898, describes the results of experiments recently made by Director Strauch, of the Agricultural School, in Neisse (Germany), with various methods for keeping eggs fresh. At the beginning of July twenty fresh eggs were treated by each method and examined at the end of February. The results are given below:

Kept in brine: all unfit for use. Not decayed, but unpalatable from being saturated with salt.

	Per cent. spoiled.
Wrapped in paper	80
Kept in a solution of salicylic acid and glycerin	80
Rubbed with salt	70
Packed in bran	70
Coated with paraffin	70
Painted with a solution of salicylic acid and glycerin	70
Immersed in boiling water 12-15 seconds	50
Treated with a solution of alum	50
Kept in a solution of salicylic acid	50
Coated with soluble glass	40
Coated with collodion	40
Coated with varnish	40
Rubbed with bacon	30
Packed in wood ashes	20
Treated with boric acid and soluble glass	20
Treated with potassium permanganate	20
Coated with vaselin and kept in lime water	All good
Kept in soluble glass	All very good

Infection of Gun-shot Wounds from Clothing.—KARLINSKI (*Centrāl für Chir.*, April 16, 1898) conducted a large series of experiments upon rabbits in order to determine the likelihood of infection of gun-shot wounds from clothing through which the bullets may have passed. The missiles and rifles were thoroughly disinfected as was the skin of the rabbit. The shot was made usually at a distance of one hundred meters, less often at two hundred meters. The wounds were immediately sealed with iodoform collodion. When the intervening clothing was artificially infected the result was both local abscesses and general infection in spite of immediate attempts at disinfection of the wound with solutions of corrosive sublimate. Infection also followed if old clothing was used although not artificially infected. If this cloth was light as, for instance, of linen or cotton, infection was sometimes absent. It was remarkable in all the experiments to what a distance fine bits of the cloth and single fibers were disseminated in the vicinity of the wound. Thus in one

instance in which the femoral artery was injured, minute fragments from the intervening cloth were disseminated microscopically in its wall.

THERAPEUTIC NOTES.

Validol.—In the *Wiener Medizinische Blätter*, December 16, 1897, mention is made of a new remedy, validol, which is a chemically pure combination of menthol and valerianic acid, containing thirty per cent. of the former. It is a clear, colorless fluid of the consistency of glycerin, with a slight, pleasant odor, and a cooling, slightly bitter taste. Schwarsenski has found it a medicine which is easily borne by nervous and feeble people. The quantity of menthol contained may be readily increased, as it dissolves menthol. It is a powerful restorative and may be used in the place of musk, camphor, ether, alcohol, etc. It is also a valuable carminative, and antihysterical. Locally it can be applied when menthol is indicated, and, as it is strongly bactericidal, it is useful for the disinfection of the skin. Internally it is given in doses of 10 to 15 drops one or more times daily, in either water or wine or with sugar. It may also be inhaled.

Nourishment of a Woman During the Puerperium.—In the *Wiener Medizinische Blätter*, December 16, 1897, attention is called to the wrong ideas which many physicians hold in regard to the amount of nourishment which a woman should receive immediately after childbirth. It is a well-known fact that after a severe surgical operation, nourishment is given to the patient as frequently as it is safe to do so, and in generous quantity. On the other hand a woman who has borne a child is often kept for days upon a little tea or zwieback or thin gruel, when in reality she should be receiving a very nutritious and abundant diet. This is a bit of ancient tradition which has come to us from the time when puerperal fever was common and when it was supposed to be dangerous to feed anything to the mother of a new-born child for several days. How unreasonable this idea is, has repeatedly been demonstrated clinically.

Use of Formaldehyd in Malignant Tumors.—BAYER (*Die Arzt. Praxis*, March 15, 1898) believes that the hardening and mortifying properties of formaldehyd will make it especially useful in malignant tumors. He applied to the surface of an inoperable cancer of the scrotal region a two-per-cent. solution of formaldehyd upon absorbent cotton, but finding this strength insufficient he increased it to eight-per-cent. With this solution it was necessary to protect the healthy parts. The application caused a dry slough, which was removed after the application of compresses soaked with acetate of aluminum. This required about fifteen days, and there was then left a clean granulating surface, with only a few nodules of tumor tissue visible in its area. In his opinion the result was better than could have been obtained by any of the topical applications heretofore recommended, and the danger of septic absorption was absent. To increase the action of the formaldehyd, it may be combined with arsenic or alcohol.

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A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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Address the Editor: J. RIDDLE GOFFE, M.D.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	\$4.00
SINGLE COPIES10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM	7.50

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LEA BROTHERS & CO.,
No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK,
AND NOS. 706, 708 & 710 SANBOM ST., PHILADELPHIA.

SATURDAY, MAY 28, 1898.

ABSCCESS OF THE THYROID GLAND.

ALTHOUGH much attention within the last few years has been called to the thyroid gland in connection with its physiologic and pathologic function, disease of this portion of the body is by no means as frequent as might be inferred from a perusal of current medical literature. Aside from goitrous swelling, as seen so commonly in certain portions of the world, and exophthalmic goiter, pathologic conditions in association with this organ are very rare, although when they do occur they are sufficiently extraordinary to attract marked attention and to be the subject of interesting study. Even more infrequently, however, than myxedema and cretinism do we meet with acute inflammation of the thyroid gland, and therefore a case which has been recently reported by Barclay in the *Australian Medical Gazette* for March, 1898, seems to us of considerable interest.

The patient was a man aged thirty-seven years, who presented himself for treatment suffering from dyspnea and high fever. The ultimate result of the case revealed the fact that he was suffering from a purulent pleurisy and that a large abscess, secondary to this purulent focus, had developed in the thyroid

gland. The case was obscure because of the fact that soft lymph covering both pleuræ led to the absence of pleuritic-friction sounds and abolished almost all thoracic symptoms. The patient's dyspnea seemed to be chiefly due to a swollen thyroid which pressed on the trachea and, on one occasion, when the patient suffered from an alarming attack of exaggerated dyspnea, it was believed that the pressure on the laryngeal nerves had set up a reflex spasm. The post-mortem examination of the thyroid showed it to be greatly enlarged, one side of it being diffuent and the other being represented by an abscess-sac from which fluid and pus spurted on section. The pus contained streptococci in abundance.

As with most cases of abscess of the thyroid gland this case, it will be seen, was due to a secondary infection; for true primary strumitis is exceedingly rare. In most of the cases which have been reported by such authors as Bowlby, Havel, Erichsen, and Thornton the condition has followed some one of the infectious diseases, such as typhus, puerperal fever, pyemia, or pneumonia. It is interesting to note that in this case, apparently owing to a sudden breaking down of a portion of the gland, thereby allowing the pus to escape through its tissues, a sudden increase in the size of the thyroid occurred in the course of half an hour, causing urgent symptoms which were exceedingly puzzling to Barclay and to other clinicians who saw the case with him in consultation.

AN IMMORAL ADVERTISEMENT.

A DECISION in an action recently brought against a newspaper in England may be of interest at this time when the editors of several American medical journals are engaged in a lively discussion about the propriety of printing advertisements of certain "remedies." The owner of a "remedy for female irregularities" known as Irristum, claimed damages against the advertising agents of *Pick-Me-Up* for breach of contract in refusing to insert their advertisement. No one reading the advertisement could doubt for a moment that the intention of the writer was to convey the meaning that the use of Irristum would bring about miscarriage. To this end the medicine was advertised in three strengths, for which different prices were charged. The official analysis did not show any material difference in the

composition of these three kinds of medicine, nor was it proven that the ingredients of the so-called remedies were in any wise capable of interrupting pregnancy. It follows, therefore, that their sale is fraudulent as well as immoral, and the jury returned a verdict for the defendant. Is it not time that similar offenders in American newspapers were made to feel that they cannot with impunity vaunt their deceptive and illegal wares in the columns of the public press? The fight ought to be taken up on all sides until reference to "female irregularities" shall be legally excluded from all advertisements.

THE AMALGAMATION OF BELLEVUE HOSPITAL MEDICAL COLLEGE WITH THE NEW YORK UNIVERSITY.

A FEW weeks ago the MEDICAL NEWS devoted considerable editorial space to a discussion of the discord between the council of the New York University and the professors in its medical department, which led to the recession of the latter and their successful endeavor to establish another medical college in this city, to be known as the University Medical College of Cornell University. Thus was chronicled the second act in a drama which has interested thousands of the alumni of these two institutions. The curtain has now been rung down upon the third, and we trust the final, act of a controversy that has been waged with no little animus and acrimony during the past year.

The union of the medical department of the New York University and Bellevue Hospital Medical College, the consummation of which was announced by the chancellor of the former institution at the fifty-seventh commencement, which was held in this city last week, is obviously a gain for medical education. It might be more correct to say that Bellevue Medical College has become the medical department of the university because the university has been, practically, without a medical faculty since the decease of its professors on April first. The new institution will be called, it is said, "The University and the Bellevue Hospital Medical College," but we venture to doubt it. Thus it may be called on paper, and thus it may be inscribed on the diplomas of its alumni, but it is contrary to the traditional hurry and bustle of the American to say that he will waste so much time and breath on designating that which will be

known in every day parlance as "Bellevue College."

Just as to-day, three years after the consolidation of the College of Physicians and Surgeons of this city with Columbia University, no one thinks of going deliberately through the intricacies of this explanatory phrase when referring to that institution, so it will be with the one which has now been so infelicitously baptized. Bellevue Medical College serves, but when called upon we can probably call up the other in proper sequence and phraseology. Many an infant is hampered throughout life by the freakish baptismal indulgence of indiscriminating parents and sponsors. A word, particularly a wholly disinterested one, to the wise will no doubt be sufficient.

This new medical school will occupy the three large and extremely well-adapted structures which they are now in possession of in Twenty-sixth street, and which will probably be somewhat remodeled during the summer, particularly the building which has been a part of the university. It is stated that the clinical professors who did not go out with the regular faculty of the university will be given places in the amalgamated institution. To do this may require considerable diplomacy on the part of the council, and not a little self-sacrifice on the part of some of the individuals. It is not quite apparent how more than one incumbent of a chair of the highly specialized subjects can be tolerated. The opportunity for self-renunciation in the interests of the corporate whole may be offered.

The amalgamation of the two schools a year ago was hailed with joy, because in union there is strength, and because it tended materially to center medical students in large, well-equipped, and well-endowed institutions. Moreover, it separated the teaching side entirely from the financial side. Interpreted as a sign of the times it meant that medical colleges as entities distinct from the university connections were in transit. Although the present arrangement afflicts us with another and unneeded medical school, we can suggest a way by which this can be remedied, and very likely to the interests of the two institutions. Cornell University is a coeducational institution and its medical department to be opened next autumn will welcome both sexes. At the present time there is in New York a long-established, honorable, and prosperous institution, known as the Woman's Medical College, which was founded

for the purpose of furnishing women opportunity to enter the portals of medicine, and less for the personal aggrandizement and glorification of its incorporators than almost any institution of the kind. As the prime necessity for its existence now ceases by the establishment of a medical school open to women in connection with one of the leading universities of this country, we suggest that the councils of these two institutions put their heads together for the purposes of propounding a plan of union. In truth, there will not be the slightest reason for the existence of the Woman's Medical College after next autumn. One of the appointees as instructor of general medicine and professor of clinical medicine in the Cornell institution has been elected recently to the chair of practice of medicine in the Woman's Medical College, and other professors in the latter institution are connected with the former. Although these gentlemen are probably quite able to discharge their dual rôle, the necessity for their so doing is not obvious. If our suggestion is adopted the buildings of the Woman's Medical College which have recently been restored and enlarged may be utilized, and this with the present laboratory and hospital facilities of the new school should be ample to train the comparatively restricted class which a beginning institution must naturally expect to have. Moreover, the adoption of such a plan would insure it a goodly number of students to start with, and would endow it with an honorable tradition, and a considerable body of alumni. We trust that this suggestion, made in the best faith, and in the interests of medical education, will receive due consideration. The consummation of it would be, we are sure, an important forward step in the line of recent advances in the study of medicine.

ECHOES AND NEWS.

Long Island College Hospital.—The thirty-ninth annual commencement took place on the 18th inst. There were sixty-nine graduates.

Formalin as a Disinfectant of the Skin.—It has been suggested by Professor Landerer of Stuttgart to apply bandages treated with a one-per-cent. solution of formalin to the skin, twelve to twenty-four hours before an operation.

Serum Treatment in Austria-Hungary.—According to a late report by the Bohemian National Committee serum

was used during the year in 493 cases of diphtheria in 31 public hospitals; 401 patients were cured, a death-rate of 18.6 per cent.

The Study of Military Surgery.—The family of the late Professor Von Lagenbeck has endowed the German Surgical Association with 50,000 marks, to enable the German surgeons, civil and military, to study military surgery in countries which may be engaged in war.

French Medical Congress.—The French Medical Congress will hold its next meeting at Lille in August, 1899, under the presidency of Professor Grasset of Montpellier. The discussions will be on (1) "Myocarditis"; (2) "Adenitis" and "Leukemia"; (3) "Acquired Tolerance of Drugs."

Complimentary Dinner to Playfair.—Lord Lister will take the chair at a complimentary dinner to be given to Dr. W. S. Playfair, who retires from hospital work after thirty-five years of service. The dinner will be given by his colleagues, former residents, and friends at the Grand Hotel, London, on June 4th.

Association of Military Surgeons of the United States.—The eighth annual meeting of this association, which was announced to occur on June 1st, 2nd, and 3rd next, has been postponed owing to the occupation of its members in the war with Spain. A date, however, will be arranged later by the executive committee.

The Prevalent Diseases in New York City.—The Health Department of New York City announces that for the week ending May 14th there were reported 500 cases of measles, with 17 deaths; 202 cases of diphtheria, with 37 deaths; 244 cases of scarlet fever, with 26 deaths; 189 cases of tuberculosis, with 168 deaths.

Potable Water on the Army Transports Provided by Distillation.—The Quartermaster's Department at the Army Building in New York recently received orders to purchase twelve complete distilling-plants for immediate shipment South, to be installed on the transports there. The plants are to vary in price from \$300 to \$2800 each, and will produce about 1080 barrels of water a day.

Improper Use of a Doctor's Signature.—Dr. A. L. Benedict of Buffalo complains that a certain pharmaceutical manufacturing company is making use, without authorization, of his name in recommending eucalyptol. A private letter written eight years ago in regard to eucalyptol, manufacturer unspecified, has been used by this firm to advertise its wares through the ruse of an interpolation.

Acting Assistant Surgeon, Marine Hospital Service.—The United States Civil Service Commission announces that on June 7, 1898, examination may be taken at any city in the United States where the commission has a competent board of examiners for the grade of assistant surgeon in the Marine Hospital Service, Treasury Department. There is at present a vacancy in this grade at Chicago, Ill., at a salary of \$100 per month, which it is desired to fill. In filling this vacancy preference will be given to eligibles who are legal residents of Chicago or vicinity.

Life Insurance and the War.—President Thomas H. Bowles of the National Association of Life Underwriters recently issued a letter to the Presidents of all the life-insurance companies in the United States recommending the establishment of a cooperative hospital service between the American life-insurance companies for the benefit of policy holders who are taking part in the present conflict between the United States and Spain. He suggests the organization of a hospital service for the purpose of rendering assistance to the policy-holders who may be sick or wounded, as well as serving as a bureau of information concerning those who fall in battle.

The Thirteenth International Medical Congress.—The organizing committee of the Thirteenth International Medical Congress, which is to be held in Paris in 1900, held its first meeting April 23rd. The officers of the committee are: President, Professor Brouardel; vice-presidents, Professors Bouchard and Marey; general secretary, Professor Chauffard; treasurer, M. Duflocq. The Executive Committee consists of Professor Lannalongue, chairman; M. Chauffard, general secretary, and MM. Bouchard, Bouilly, Brouardel, Dieu, Gariel, Le Dentu, Malassez, Nocard, Reymond, Rendu, and Roux. The formal opening of the Congress has been provisionally fixed for August 2, 1900.

Hot Oil as a Sterilizer.—*The Hospital* extols the virtues of hot oil as more efficient than boiled water in sterilizing instruments, especially syringes. Olive oil at a temperature of 320° to 356° F. acts very quickly and with great power. To obtain complete sterilization of the instruments, it suffices to dip them for an instant into the hot oil, and in the case of syringes it is sufficient to fill them twice with oil at the temperature mentioned. The temperature of the heated oil may be determined by a thermometer, which certainly is the scientific way, but Professor Wright of the Netley Hospital in England suggests the very crude but rough and ready method of dropping a bread crumb into the oil, which becomes brown and crisp as soon as the required temperature is obtained.

The Royal Army Medical Corps.—On May 4th the Lord Mayor of London gave a banquet to the medical profession for the first time. It was an occasion long to be remembered by the medical men, not only for the brilliant manner in which the Lord Mayor extended the traditional hospitality of the city, but also for the speech of Lord Lansdowne, which marks the end of the long dispute into which the medical profession was forced on behalf of those of its members who entered the military service of the State. The compliments paid to army medical officers by Lord Lansdowne were handsome. Among his numerous remarks he said that there is no department in the public service which owes more to or depends more upon, the medical profession than the army, and that medical officers are soldiers in the fullest sense of the word, and on this account the Government was prepared to treat them with the respect to which they are entitled.

Suicide of Professor Seidel.—Professor Seidel was the chief surgeon of the Brunswick Hospital, Berlin. Through the dissatisfaction of assistants, who wrote a complaint to the Brunswick Ministry stating that the professor was careless in antiseptic precautions, and had thereby caused the death of a patient, the professor was suspended. Being a man of very sensitive and nervous temperament, he felt disgraced, and committed suicide the following day, leaving letters asking his brothers to clear his name. The brothers of the professor brought suit for libel against the assistants, which terminated in a verdict for the brothers. The great interest of this lawsuit from a medical point of view is undoubtedly the evidence of Professor v. Bergamann, which he gave in favor of the late Professor Seidel and against the assistants. Bergamann stated that it was his decided conviction that the problem of sepsis and antisepsis in surgery is as yet by no means scientifically solved; that the most distinguished surgeons are very much at variance on the subject.

President Eliot's Advice to Harvard Students Regarding the War.—At the concluding talk to students of Harvard University, on "Soldiers' and Sailors' Life," President Eliot voiced the sentiments of the faculty in the matter of enlistment for the war. He said that a student's duty lay between his personal obligations and those to this country. In times of crisis the latter are above everything, but at present the situation is not sufficiently grave to force the student to put his all behind him and rush to the front. In closing the President said that the faculty and board of overseers had decided to establish a permanent organization where students who desired it might receive military instruction, and that next year such an organization would be formed. Every man who joined would be put to the physical test required for recruits for the regular army. The President also recommended that the students avail themselves of the opportunity to become expert marksmen by practice in the new base-ball cage, which has been fitted up with targets and rifle racks for the purpose. He closed by urging every man to take part in the military drill now going forward.

Entente Cordiale.—The friendliness of the rivalry between the faculty of the old University Medical School and that of Bellevue Hospital Medical School has long been recognized. Still there are degrees of intimacy that pass the point of endurance, and when the members of these two rival faculties found themselves one year ago sitting in each other's laps in the professorial chairs of the combined institution, the limit seemed to have been reached and they flew from each other's presence like pith-balls charged with opposite electricity. Now that their distinct paths have been marked out and lie in parallel lines at a sufficiently safe distance, we find them again falling on each other's necks, after the manner of imperial personages. When the Czar of all the Russias and the Emperor of Germany meet they signalize their friendship by appearing in each other's clothes. Behold! our

medical friends adopting the same custom and presenting themselves in each other's domicile. Upon the opening of the fall session of the medical schools, Bellevue will be domiciled in the old buildings of the University Faculty and the University Faculty under the designation of the Medical College of Cornell University, will have its temporary home in the old Bellevue buildings on the grounds of the Hospital.

Law Governing the Practice of Medicine in the British Possessions on the Klondike.—To those contemplating a professional residence in the gold fields of Yukon the following extracts from the official Medical Register of the Northwest Territories will be of interest: (a) "The Council shall admit upon the Register any person possessing a diploma from any college in Great Britain and Ireland (having power to grant such diploma), entitling him to practise medicine and surgery, and who shall produce such diploma and furnish satisfactory evidence of identification. (b) The Council shall admit upon the Register any member of the College of Physicians and Surgeons of the Provinces of Manitoba, Ontario, and Quebec, upon producing satisfactory evidence of the same and of identification. The fee for registration under any clause of this ordinance shall be \$50. (c) The Council shall admit upon the Register any person who shall produce from any recognized college or school of medicine and surgery a certificate or certificates that he has taken a four-years' course of study or a diploma of qualification from such recognized college or school, provided also that the applicant shall furnish to the Council satisfactory evidence of identification and pass before the members thereof, or such examiners as may be appointed for the purpose, a satisfactory examination touching his fitness and capacity to practise as a physician and surgeon, and provided that every applicant for such examination shall pay to the Registrar of the College of Physicians and Surgeons of the Northwest Territories the sum of \$50 toward defraying the expenses of the examining board. Examinations: The examination for candidates for registration will take place on the second Wednesday in January, May, and September in each year." Further information may be had by addressing Dr. Hugh U. Bain, Registrar, Prince Albert, Saskatchewan.

The Navy Will Cooperate in Preventing the Introduction of Yellow Fever.—In accordance with the request of the Secretary of the Treasury made at the suggestion of Surgeon-General Wyman of the Marine Hospital Service, the Honorable J. D. Long, Secretary of the Navy, has issued instructions to the commandant of the United States Navy Station at Key West and the Commander-in-Chief of the North Atlantic Squadron to keep a lookout for and apprehend any small vessels which it is believed intend to affect a surreptitious landing on the Florida coast and to take them immediately under guard to the nearest quarantine station for necessary detention and disinfection. In his letter to the Secretary of the Navy, Secretary Gage says: "I am informed by the Surgeon-General of the Marine Hospital Service that even under ordinary circumstances there has been danger of the introduction of yellow fever from Cuba

into the State of Florida through the medium of small craft containing persons and baggage, seeking for various reasons surreptitiously to land upon the Florida coast. Under present conditions it is believed that the danger from these small crafts is greatly increased. During the active quarantine season from April 1st to November 1st it is contrary to the United States Quarantine Regulations for persons from Cuba not immune to yellow fever to be landed at any point South of the southern boundary of Maryland without detention in quarantine from three to five days and disinfection of their baggage. The importance of enforcing these regulations throughout the summer is very great, and I have to request that the officers of the fleet in Florida or Cuban waters be instructed to aid in the prevention of the introduction of yellow fever in the United States by keeping vigilant outlook for small vessels of the character above described and upon their apprehension such vessels and their personnel be taken immediately under guard, to the nearest quarantine station for necessary detention and disinfection."

National Quarantine.—Dr. H. M. Folkes of Biloxi, Miss., in a paper read before the Mississippi State Medical Association, April 8, 1898, and published in the *Virginia Semi-Monthly*, May 13th, says: "While a strong advocate of State's rights in health affairs, I must confess to a fascination with the idea of Federal handling of epidemics for the following reasons: They have the power of securing uniformity in rules and regulations, the authority in interstate questions, the likelihood of its officers not being swayed by local influences—though this has certain drawbacks—and, finally, what to my mind most recommends it is the opportunity to organize a company of immunes properly officered, equipped, and drilled, to act as a cordon around infected points. This company should be stationed constantly at some Southern place, and should be prepared to march at an hour's notice. Such an organization should be ordered to an infected point, placed on duty at once, and could lend invaluable aid in checking the spread of the disease. They should be instructed in all sanitary matters, and those not under arms as guards could be of service as sanitary inspectors, nurses, etc., in the afflicted place. Not a wheel should turn in the town, not a person be allowed to go in or out, until this force has arrived by special train. Uniformity of rules and regulations is so essential to an intelligent handling of an epidemic that it seems hardly necessary to refer to the fact; yet in our own State the recent law is so modified as to almost entirely subordinate the authority of the State Board of Health to any little town which may decline to receive persons absolutely non-dangerous. The proper intent of a law based upon modern sanitary and commercial requirements, is to afford protection and enable business to proceed. Unfortunately, our law largely nullifies the good accomplished at the recent Quarantine Conferences in New Orleans and Atlanta, where were adopted a series of rules and regulations positively accomplishing the two requirements above mentioned, safety and continued commerce. Our future laws should be based upon the lines laid down by the above-mentioned conventions."

CORRESPONDENCE.

THE GERMAN UNIVERSITY SEMESTERS.

THE special correspondent of the MEDICAL NEWS in Germany, who has been absent from Berlin for several weeks in attendance upon the German Medical Congress at Wiesbaden, and the Neurological Congress at Jena, and who has been taking extensive notes on the system of medical teaching at the smaller universities in Western and Middle Germany, Bonn, Giessen, Marburg, and Jena, requests us to publish the following note:

To the Editor of the MEDICAL NEWS.

DEAR SIR: Through your columns I beg to express my thanks to Professor George Dock of the University of Michigan, Ann Arbor, for his courteous correction, as printed in the MEDICAL NEWS of April 2d, of certain statements of mine contained in the Berlin correspondence of March 19th. I regret not having been in a position to acknowledge it before. It is the *Austrian*, not the German, universities which close about July 1st. Hence my mistake. The latter close about the 25th of July. May I add, however, that the kernel of the bit of information imparted in my letter, and which is of special interest to American medical men, remains absolutely true. The German medical course consists of nine semesters of scant three months each, on an average, of actual required attendance at clinics and lectures, etc., while the course at our best American medical colleges consists of four years of more than seven months each of actual work. May I add too, that while we lack the preliminary training in America, unfortunately, our actual medical courses compare very favorably with those given here even at the best universities. Personal observation has convinced me that our best American medical schools are at the present moment turning out, on the whole, at least as well trained, practical physicians and surgeons as the corresponding German institutions.

BERLIN CORRESPONDENT OF THE MEDICAL NEWS.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE DANGER FROM YELLOW FEVER TO THE AMERICAN ARMY IN CUBA: OPINION OF DR. JOHN GUI-TERAS—PENNSYLVANIA STATE MEDICAL SOCIETY MEETING—A PROTEST FROM THE HOMEOPATHS—THE PENNSYLVANIA EPILEPTIC HOSPITAL FORMALLY OPENED—COMMENCEMENT EXERCISES OF MEDICAL COLLEGES.

PHILADELPHIA, May 24, 1898.

IN view of the almost universal belief in the danger from yellow fever to unacclimated American troops sent to Cuba at this season of the year, the following remarks, expressed by Dr. John Guiteras, of the University of Pennsylvania, and now in the service of the United States Army, as a yellow-fever expert, are important and of timely interest. Concerning the geographical distribution of the infection, Dr. Guiteras has this to say: "By far the greater part of the territory of Cuba is free from the yellow-fever infection. The disease is, in fact, cir-

cumscribed to the larger and more important seaport towns, such as Havana, Matanzas, Sagua, Nuevitas, Santiago, Manzanillo, Cienfuegos, and Batabano. The interior of the island, in a general way, may be considered free from infection. This is not due, as it is generally believed, to altitude. The seacoast, outside of the centers of population, is as free from yellow fever as the highest mountains. On the other hand, it is well to know that there is no part of the territory of Cuba where yellow fever may not be carried. The experiences of the Spanish illustrate this very clearly. It has been their practice to make the city of Havana their base of supplies. They have actually had, and probably still have, a large depot of military outfits in San Ambrosia hospital. These supplies became infected, so that this yellow-fever hospital in Havana may be looked upon as a distributing center of the disease to the Spanish army. If, therefore, we should be able to keep our army outside of the yellow-fever centers, if we have our base of supplies in the United States, if these supplies are landed or kept at an uninfected port, and if we are able to prevent communication between the army and the infected location, all the forces of the United States could be held in Cuba without infection."

If the disease should be introduced by importation into one of our army camps, active measures could be taken to prevent the further spread of the disease. In the first place, preparations have been made for the prompt detention of such cases, and in the second place, isolation-tents and hospitals will be provided for their immediate segregation. By such measures the large detention-camps that have been established by the Marine Hospital Service in our late Southern epidemic have been kept from all contamination. Cases of yellow fever have broken out in these camps among the recent arrivals, but the system of segregation has made it possible to keep the camp itself in the condition of an uninfected place. As a last resort, if there be evidences of actual infection of the camp, we may appeal to the radical measures of change of site of the whole camp, after disinfection or destruction of all the possible sources of infection. The American army having occupied Havana, Dr. Guiteras recommends that the following sanitary measures should be followed: First, diagnosis of all cases of yellow fever, including the native children; second, disinfection of all premises in which yellow fever has occurred; third, a modern system of sewerage extending throughout the city; fourth, the proper paving of the streets. It is not thought that the popular belief in the contamination by the harbor rests on much foundation, for attention is drawn to the fact that it is a very rare occurrence to hear of yellow fever breaking out among the crews of merchant vessels which are kept anchored and all communication with the shore cut off. Finally, Dr. Guiteras states that the annual epidemic of yellow fever breaks out in Havana regularly during the month of June, and increases during July and August. It begins to decrease during September, and practically disappears by November.

The semicentennial meeting of the Pennsylvania State Medical Society was held in Lancaster, May 17th, 18th, and 19th. Several hundred delegates from all parts of

the State were in attendance, and a most successful three-days' session resulted. Inasmuch as in Lancaster was held the first meeting and the organization of the Society, and as its first president was a native of that place, it seemed especially appropriate that the jubilee of the Society should have been held in that city. Elaborate exercises commemorative of the fiftieth anniversary of the Society were held in the Court House. The scientific business of the meeting reached a high plane, the discussions of papers were spirited and instructive, and a total absence of that sectional prejudice and personal enmity which so often mars the proceedings of State societies, contributed to ensure to the sessions most valuable results.

At the last monthly meeting of the Homeopathic Medical Society on May 16th, an animated discussion took place concerning the movement, now in progress in this city, to prevent "discrimination," as the followers of Hahnemann are pleased to term it, against the appointment of homeopaths to Government positions in the army and navy. A number of letters from indignant protesters were read, a flood of comment unfavorable to the army, navy, and militia officials was indulged in, and it was triumphantly announced that a bill has been introduced in Congress by Senator Allen of Nebraska, making it illegal to discriminate against any school of medicine in making appointments to any branch of the various services. A committee, appointed at this meeting, was introduced to the President at Washington a few days later, to present a petition embodying the main features of Senator Allen's bill. It will be amusing to follow the proceedings which are booked to develop along the lines of homeopathic agitation. The antivaccinationists and antivivisectionists have had their fling at the public, the faith-curers are many of them in jail, and it is but fair to give these other agitators their chance. The public must be amused.

The Pennsylvania Epileptic Hospital and Colony Farm at Oakbourne was formally opened, with appropriate exercises on May 19th. The number of invitations issued was large, and many well-known persons were present. The farm is an outgrowth of the original institution which occupied for many years inadequate quarters in the heart of this city, and it is a matter of much congratulation that the managers have acquired for the treatment of this unfortunate class of invalids such admirable facilities as the new hospital possesses.

The graduating exercises of the class of '98 at the Medico-Chirurgical College were held in the Academy of Music, May 21st, at which degrees were conferred upon the largest class ever graduated from this institution. Rev. Dr. Edsall Ferrier of Easton made the opening prayer, and Charles M. Swain, acting president of the college, conferred the degrees. Dr. Isaac Ott, professor of physiology, delivered the annual address to the graduating class.

The annual commencement exercises of the Woman's Medical College of Pennsylvania were held on May 18th, in the Academy of Music. The annual address to the graduates, who numbered thirty-five, was made by Dr. A. A. Stevens, professor of pathology.

TRANSACTIONS OF FOREIGN SOCIETIES.

Vienna.

THE VARIOUS REACTIONS OF THE BODY UNDER THE INFLUENCE OF INFECTIONS.

PALTAUF read a paper before the Imperio-Royal Society of Physicians, March 18th, upon the "Reactions of the Organism against Infections." As most of the symptoms of disease are produced by infection the consideration of the above subject includes almost the whole of pathology. Reactions which for a long time have been known to exist are fever, degeneration of the tissues, and inflammation. Fever is produced by substances either manufactured directly by the micro-organisms or which result from their injury to the tissues. Such substances act as poisons upon the nerve-centers that regulate the temperature of the body. Fever may be produced by living bacteria, by dead bacteria, or by extracts from them. Although an increase of fever in an infectious disease accompanies the increase of bacteria and defervescence is associated with their destruction, still one dare not conclude that the fever is a process designed to oppose infection; for fever comes not only in infections, but also as a result of other poison, and its favorable effects are lost in the numerous accompanying injuries which it works.

The degenerations of tissue do not result altogether from the high temperature. They are due rather to the products of the activity of the micro-organisms. The proof of this lies in the fact that by different infections different organs are the chief sufferers, as the muscle of the heart in diphtheria, the liver in typhoid fever, or the central nervous system in tetanus and rabies. And these last two infections differ, for in tetanus the poison is absorbed and acts upon the nerve-centers, while in rabies it proceeds from the periphery to the center of the nervous system along the nerves themselves.

Inflammation has long been known to be one of the reactions of infection, although at first only suppurative inflammation was recognized as such. Now it is known that the same micro-organism, according to its virulence, may produce different kinds of inflammation, and suppuration may be produced by very different kinds of bacteria. The tissue, too, determines to a certain extent the kind of inflammation. Thus in the mucous membrane of the air-passages and in the tissue of the lungs fibrinous inflammation is most common irrespective of the kind of bacteria which excites it. The chronic inflammations which occur have peculiar characteristics, and are known as specific. Under this heading are included those of glanders, tuberculosis, syphilis, leprosy, and more recently to these have been added the inflammations of actinomycosis, scleroma, mycetoma pedis, and mycosis cutis chronica, or Aleppo evil. In all these inflammations the limited extent of the influence of the infection is noticeable. In all of them there is produced a peculiar granulation tissue which probably has other differences except the presence in it of the various bacteria, although little is known about them.

Inflammations appear to be a struggle between the organism and the invading micro-organisms. Metschni-

koff's original idea was that bacteria were digested by the cells. Later researches have shown that bactericidal powers must be attributed to the fluids of the organism as well as to its cellular elements. There are certain other reactions produced in the body by infection which may well be called physiologic. Behring and Kitasato found out that the blood of an animal which had withstood diphtheria and tetanus possessed substances which, while they would not kill these bacteria, would nevertheless protect other animals from the fatal effects of these infections. Such products are known as antitoxins. It was once assumed that an antitoxin was itself a poison which counteracted the poison of the bacteria. The counteraction, however, is not a simple chemical process, as it requires the cooperation of a living animal in order to be carried out. Similar protective powers have been found in the serum of animals which have withstood the infections of typhoid fever and cholera. But in these cases the protection arises by actual destruction of the micro-organisms, for the infection of typhoid and cholera can only be produced by the bacteria themselves as the toxins of these diseases are not known.

Gruber showed that the antityphoid and anticholeraic serums could be used to make a diagnosis of these diseases, since the addition of either of these serums to a drop of a fresh culture of the corresponding bacteria caused them to gather together in clumps and to cease their motions. This phenomenon, which is known as an agglutination, is found also in the plague and in Malta fever, as well as in the infection produced by the bacteria coli, proteus, and pyocyaneus, but not in influenza or in the infection produced by the meningococcus.

In other affections the serum contains certain protective properties which are neither bactericidal nor are they to be spoken of as weakening the power of the micro-organisms. Their action is rather a stimulating one upon the cells, since they incite the leucocytes in the animal in question to a more active phagocytosis. Since normal serum possesses a certain anti-infectious power, one must be on his guard in experiments in this direction.

Berlin.

ACTINOMYCOSIS OF THE THORAX AND LUNGS—EGYPTIAN OPHTHALMIA NOT TRACHOMA—ASCENDING NEURITIS.

At the Medical Society, March 16th, KAREWSKI read a paper on actinomycosis as it appears in the thorax and lungs. This disease, which has been known only twenty-three years, is by no means an uncommon one, and the reason that it did not sooner attract attention is that it was mistaken for other diseases, usually tuberculosis. Recent communications upon it have shown that it is in many instances amenable to treatment, both surgical and medical, and that in various parts of the body it has a marked tendency to heal spontaneously. But only three cases have been recorded in which actinomycosis of the lungs was not fatal. Karewski spoke of a fourth successful case which occurred in his own practice. The patient was a strong man of middle life, who had symptoms of trouble with the right side of his chest, and a rapidly grow-

ing tumor. At operation, four months after the beginning of the trouble, it was found necessary to remove the third, fourth, fifth, sixth, and seventh ribs from the sternum to the posterior axillary line, together with a portion of the underlying pulmonary tissue as large as a small fist. Owing to collapse, the anesthetic was stopped before the operation was completed, and the lung was removed by the cautery, without pain or hemorrhage, although the patient was conscious at the time. A tedious convalescence followed. The large wound was covered with skin grafts, which adhered, except over the pulmonary tissue. A large bronchial fistula persisted, sufficiently large to permit of respiration through it, when the mouth and nose were covered. The man was also unable to raise the right arm. Otherwise the recovery was satisfactory, and is to be attributed, according to the writer, to the fact that all the diseased tissue was removed or destroyed.

Pulmonary actinomycosis may be divided into three stages, a latent one, in which the affection is confined to the lungs themselves; a florid stage, in which the growth extends into the pleural cavity, causing exudation or adhesions, or both, and attacks the chest wall; and a chronic period, in which the disease extends into the abdominal cavity, or breaks externally, or forms metastases. Naturally therapeutic efforts can avail only in the first two stages, and hence the importance of an exact diagnosis.

In the first stage, the affection greatly resembles phthisis, although the subclavicular and axillary portions of the lung are more likely to be attacked than the apex. Later the sputum becomes mucopurulent, and possibly bloody, and the characteristic organisms may be found in it, though this seldom happens. Elastic fibers are wanting. From the pleural cavity there is usually no fluid to be obtained, or at best a little-serous or bloody fluid.

This fact combined with the elastic character of the swelling, explains why in the second stage, the affection is often mistaken for sarcoma. In the third stage owing to many abscesses, and metastases in various organs, the disease takes on the form of pyemia.

Without operation pulmonary actinomycosis, according to the eleven recorded cases, is absolutely fatal in from one to five years after its first appearance.

At the session of March 23d GREEFF spoke of the alarm which the recent outbreak of "Egyptian" ophthalmia had occasioned, owing to the fact that the disease was falsely assumed to be the same as trachoma. The latter shows little tendency to travel from those places in which it is endemic, and it does not exist in Berlin. For the sake of clearness, acute epidemics of ophthalmia, which are liable to occur anywhere, should be characterized by the particular agent which causes them, e.g., the pneumococcus, or various bacilli, as the case may be. The distinction between the swollen follicles which accompany contagious conjunctivitis, and the granulations of true trachoma, is not a difficult one for a good observer to make. A mistake in this regard, however has led in many instances to a long and needlessly harsh treatment.

At the Union for Internal Medicine, March 21st, LEYDEN discussed a case of ascending neuritis in which the autopsy revealed in a striking manner how, in the

gangrenous right leg of a paralytic (a left-sided hemiplegia), an infection of streptococci had commenced in the sciatic nerve and had proceeded, with lessening intensity, clear into the corresponding half of the spinal cord. In the popliteal space the streptococci were found to have made their way into the nerve, and were found to be lying between the very nerve fibers. A little higher up, no micrococci were to be seen, but only an infiltration of the sheath and interstitial tissue of the nerve with leucocytes. In the spinal cord, the leucocytes were crowded into the perivascular spaces of the anterior horn of the right side, thus showing plainly that this was an ascending infectious neuritis, in the strict sense of the words. The pathologic changes were the same as those which have been produced in animals by a chemic irritation of a peripheral nerve.

SOCIETY PROCEEDINGS.

SEMICENTENNIAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Lancaster, Pa., May 17, 18, and 19, 1898.

FIRST DAY.

AFTER the President, DR. MURRAY WEIDMAN, had called the society to order and the usual benediction had been given, Dr. G. W. Berntheisel, President of the Lancaster City and County Medical Society, delivered an address of welcome. Dr. H. S. McConnell of New Brighton then delivered the "Address on Medicine," laying stress on the matter of dietetics and reviewing therapeutic progress.

After an essay on "Alcohol," by Dr. J. M. Batten of Pittsburg, and one on "The Ice Treatment in Pneumonia," by Dr. Thos. J. Mays of Philadelphia, Dr. J. I. Johnson of Pittsburg read a report on "A Case of Tuberculous Cirrhosis of the Liver," which he considered an important and rarely diagnosed condition. "The Variation in Strength and Consequent Unreliability of the More Common Official Preparations of the Materia Medica, as Proven by Special Clinical Observations," by Dr. Henry Beates, Jr., of Philadelphia, was next on the program. He hesitated, he said, in presenting the paper, for he knew in so doing he attacked subjects never before questioned, and hinted a departure from a life-long foundation. He questioned whether the profession has an exact science in its materia medica, and were it not for many years of clinical observation he would not feel justified in his results. All drugs in the Materia Medica are classified by the *preparation* of each, a tincture, a fluid extract, etc., and not by the potentialities of the several derivatives even though they may be antagonistic. As an illustration, he took opium, which the U. S. P. directs shall contain not less than nine per cent. nor more than fourteen per cent. of morphin; from this a tincture of ten-per-cent. strength is made, and how can the tinctures be uniform? Further than this, no two roots of any plant contain the same amount of active principles, and

we therefore get the physiologic effect of whichever may be present in the greater amount, and confusion is the result of the action attributed to the drug. As a specific instance he quoted digitalis, with its almost innumerable alkaloids, one of which is known to be a cardiac depressant, while the others are stimulants. This typifies the complexity of drugs, and it is not strange under the circumstances that we encounter such diversity of opinion as to the value of any drug. Aconite, he had found, will sometimes act most satisfactorily as a sensory paralyzant, while at other times its depressant action on the heart will preclude its use for this purpose, showing the ascendancy of one property at one time, the other property at another.

DR. ALFRED KOENIG of Pittsburg followed with a paper on "Therapeutic Fasting in Typhoid Fever," in which he advocated a limited diet, claiming that feeding of certain prescribed quantities at certain prescribed times was often nauseous to the patient, and in excess of Nature's demands.

DR. S. SOLIS COHEN of Philadelphia read the next paper on "The Treatment of Patients with Typhoid Fever." He called attention to the fact that a physician should guide his patient through the illness, and only interfere as occasions arise. Temperature, of itself, not being a factor to be dreaded, the coal-tar products as antipyretics are abandoned, and cold water is used with reaction as its chief object. He wished, he said, to put himself on record as being against the extreme use of the Brand method; of "systems" it is the best, but "systems" are poor. In his opinion, also, to strike at one symptom, unless most urgent, is often to put the patient in his grave. Feeding, like the entire treatment, should be fitted to the case, water should be used freely internally and externally. Where sponging is employed it is necessary to see that it is properly done; the bed should be warmed for the patient's return, red wine before and after the bath should be given in place of whisky, and for severe cases the bath should be used. The "pump-handle" charts, produced by frequent bathing, and exhibited in hospital wards, he condemned, together with the practice of wakening a patient for a bath. As initial treatment he advised calomel and intestinal antiseptics.

An interesting case of "Orchitis Complicating Typhoid Fever" was reported by Dr. A. A. Eshner of Philadelphia, together with a brief review of forty-three other cases collected by the author. From his experience and from the literature on the subject, he summarized as follows: Orchitis is rare, generally a sequel, occurring during convalescence, involving one or the other testicle, and not infrequently the epididymis. It usually lasts a week or ten days, and generally ends in resolution, though supuration or subsequent atrophy may follow. Its cause is probably an infection of the blood by the typhoid bacillus.

DR. MCCORMICK of Williamsport, in the discussion which followed, condemned the practice of locking up the bowels in hemorrhage. Dr. H. A. Hare of Philadelphia spoke of the extreme use of the Brand bath, the excess of which he condemned, recommended a more liberal diet,

and spoke of the advantages of camphor as a stimulant, comparing it to strychnin, than which he thought it more lasting. He employs it in 1-grain doses, dissolved in oil, and given hypodermically. Drs. Heyl of Pittsburg, Judson Daland of Philadelphia, and McConnell of Pittsburg also joined in the discussion.

DR. WM. T. ENGLISH of Pittsburg advocated the use of "Opiates in Bronchitis," and from observation in some 200 cases drew the conclusion that they (1) reduce inflammation, (2) alter and limit secretion, and (3) relieve pain and insomnia. He explained the great benefit obtained on the ground that opium (which he uses) equalizes circulation, thus overcoming the congestion, and supports the heart.

One of the most interesting papers read was by Dr. H. A. Hare of Philadelphia on "The Treatment of Toxemia by Intravenous Injections and Hypodermoclysis; of Aneurism by Electrolysis; of Hemorrhage by Calcium Chlorid." After describing the technic of the first-named treatment, he stated that it was his custom to bleed on the opposite side of the body to which the transfusion was given, when arterial tension was high, and that unless the condition was pressing he preferred hypodermoclysis. Under the second heading he reported a case of aortic aneurism in which electrolysis was most successful. The patient, who was suffering from a large aneurism, was operated on March 3, 1898, with the assistance of Dr. D. D. Stewart of Philadelphia, to whom the credit of the introduction of electrolysis in this country is due. Nine feet of gold wire was introduced, and a current of from forty to seventy milliamperes passed through for about an hour and forty minutes. At the end of forty-eight hours there was no bruit, less thrill, and less expansion, which symptoms had been most marked. Since that time the patient has gained ten pounds in weight, and is now walking around the wards; expansion is absent, and the only symptom present is a slight impulse felt at the seat of the lesion.

He reported, also, two cases in which he had used calcium chlorid in hemorrhage with marked success, and called attention to the fact that an excessive use of the drug for any prolonged time has a deleterious effect on the coagulability of the blood.

DR. J. MADISON TAYLOR of Philadelphia read a paper on "Three Cases of Lumbar Puncture for the Relief of Symptoms of Leptomeningitis," after which Dr. A. B. Dundore of Reading delivered the "Address on Hygiene." Dr. J. V. Shoemaker of Philadelphia closed the afternoon session by exhibiting two interesting cases, one of psoriasis and the other of fibroma molloscum.

In the evening, at the Lancaster Court House, an interesting musical program was rendered, and an address of welcome was made by Hon. W. U. Hensel, President of the State Bar Association. The State Medical Society's president, Dr. Weidman, then reviewed the work of the Society, calling attention its long record and the advances made in medicine.

SECOND DAY.

The first paper, entitled "The Natural Agencies Concerned in the Purification of Polluted Waters" was read

by Dr. H. Bergy of Philadelphia, and he was followed by Dr. H. S. Anders of Philadelphia with a paper on "The Individual Communion Cup and Its Critics," which was discussed by Dr. Diller of Pittsburg, who did not agree with the author as to the wisdom of agitation on the subject.

A paper, entitled "Some Points on Infant-Feeding" was read by Dr. Edwin Rosenthal, who pointed out the necessity of having a "home-made" *modified milk* which would be less expensive than that prepared by the laboratories. Cow's milk, next to mother's milk, he believes to be the best, and for the new-born child gives equal parts of milk and boiling water with a pinch of common salt. Bowel movements he controls to a large extent by oatmeal for constipation and barley for diarrhea. He also advised a more liberal use of salt in the diet of children and urged the necessity of modifying the diet to suit.

DR. CHARLES W. DULLES of Philadelphia read a paper on "A Simple and Satisfactory Method of Examining Urine." After twenty-years' experience he considers albumin, sugar, and sediment the objects to be examined for and to search for chlorids and indican is a waste of time. He classifies the presence of albumin and sugar as "very little" or a "great deal" and decries the importance paid to small amounts of either. For albumin he uses heat and nitric acid; for the phosphates he considers caustic potash *par excellence*, as it is, in his opinion, a most delicate test for sugar at the same time. To a microscopic examination he gives the most attention, believing that it reveals pathologic conditions not yielded by chemic tests. Blood and pus, whenever present, are important, but a few hyaline casts or small amounts of epithelium are not of importance.

Extracts from the "Address on Surgery," read by Dr. W. L. Estes of South Bethlehem, are as follows: During the past year, among the many advances may be mentioned the removal of the entire human stomach by Schlatter of Zurich, not only as an evidence of remarkable surgical technic but also as a contribution to our knowledge of the physiology of digestion. It should be remembered however, by those who would follow, that all the conditions existing in his patient were particularly favorable to success. Another notable instance of ablation and the marvelous adaptability of the gastro-intestinal tract was the case of Shepherd. In extirpating a thirteen-pound fibromyomata of the mesentery he removed seven feet, eight inches of the small intestine, and the patient not only recovered but gained in weight. Hepatic and renal surgery have also had a great impetus—Robson, Lange, Senn, Halsted, Murphy, and Fenger in cholelithiasis, Kelly, Weir, Fenger, Gerster, and others in renal surgery. Among other advances may be mentioned Kelly (in this country) and Pawlik (on the Continent) in ureteral catheterization, and Kelly in the air-distention method for cystoscopic examination of the bladder.

Gynecology has also advanced. A further knowledge of the Röntgen-ray has narrowed down its possibilities, and Schleich's anesthesia has not received the hearty endorsement of American physicians. In the field of antiseptics, formaldehyd has found much favor.

The distinction between "gynecologic" surgery and "general" surgery is disappearing while the hitherto neglected "traumatic" surgery, as opposed to pathologic surgery and observed by the mine, railroad, or mill surgeons, is beginning to receive recognition.

By a personal practice, founded on the danger of anemia in operations, the mortality of amputations has been greatly reduced. To wait thirty or forty hours before operating, meanwhile using antiseptics, can do no harm, while it offers an opportunity to stimulate the patient, fill the blood-vessels, and greatly decrease the danger from shock and exhaustion.

A recent notice in Stephen Paget's book on John Hunter sums up the year's lesson. It says: "The lesson of Hunter's life was never more needed than to-day, when mechanical conceptions of surgery are so dominant and when technic has so largely replaced pathology."

"The Removal of Stone in the Bladder" was the title of a paper read by Dr. William S. Forbes of Philadelphia. He called attention to the advantages of litholapaxy over suprapubic cystotomy, and gave statistics of mortality showing a large difference in favor of the former. American physicians, to his regret, seem far behind English operators in this one field.

DR. EVAN O'NEILL KANE of Kane, in his paper on "Cargut," condemned its use, and was followed by Dr. Ernest Laplace of Philadelphia, whose topic was "The Pathology and Surgical Treatment of Chronic Varicose Ulcers of the Leg." Being due to a disturbance of the superficial circulation of the leg, he advises removal of the cause, the varicose veins, which he accomplishes by a circular incision around the leg, and ligation. He advises also the treatment of any diathesis the patient may suffer from, as well as the local treatment of the ulcer.

DR. J. R. CARE of Worcester reported a "Case of Unilateral Castration and Its Effect on an Enlarged Prostate Gland." This case was markedly successful, the prostate gland diminishing in size and affording great relief to the patient. He believes that bilateral castration causes a more rapid diminution in size, but that the unilateral operation is indicated in cases seen early.

"Chronic Diarrhea as a Symptom of Rectal Disease," by Dr. W. M. Beach of Pittsburg, was the next paper. After speaking of the futility of internal medication in many cases, he classified the causes of diarrhea as follows:

(1) General proctitis; (2) ulceration; (3) fecal impaction; (4) polypi and neoplasms. The treatment in general should consist in keeping the intestinal canal aseptic and clear of *debris*, in depleting the engorged mucosa, and in removing diseased areas. He also described in detail the treatment for the various causes.

DR. L. J. HAMMOND of Philadelphia read the next paper entitled "The Radical Cure of Hernia by the Method of Nelaton and Ombradin, with Report of Cases." He reviewed the methods of Halsted, Bassini, and others, and described the technic of Nelaton and Ombradin, who make a hole in the pelvis for the proximal end of the spermatic cord. Of three cases in which the speaker operated by this method, two were eminently successful,

and the third, though protracted, was finally satisfactory. His experience promises few recurrences by this method.

"The Surgical Treatment of Common Deformities of the Face," by Dr. John B. Roberts of Philadelphia, was next read. His principal points were as follows: The deleterious influence on the mental aspect of persons so deformed is well known, as is also the effect on the earning capacity of the individual, particularly servants, nurses, and salesmen. In urban communities, being familiar with the safety of surgical science, persons so afflicted more often consult the surgeon, but in sparsely settled localities the sufferer is rarely relieved. The abundant blood-supply of the face, insuring against gangrene of the flaps, is an important factor, and it remains to have the operation well planned and artistically performed to insure success. It is important to insist upon the necessity for repeated operations, for very often crude restoration of the parts is all that can be accomplished at first.

DR. B. D. DETWILER of Williamsport delivered the "Address in Mental Disorders." There are 10,000 insane in Pennsylvania, and an annual increase of from 300 to 500. One cause for this unusual number is the allowance of unfit marriages. Sterility of those so afflicted is the natural cure, but so slow is this extirpation that it must be hastened and the law invoked. Two instances were quoted of families having many descendants who were mentally defective, and so great was the increasing number of insane thus descended as to confirm the opinion of the necessity of State interference. Of patients treated for insanity, those suffering from cerebral exhaustion, when treated by isolation, rest, and sleep, the prognosis is good; of those caused by syphilis and alcohol, seventy-five to eighty per cent. recover if treated early, but in those suffering from hereditary insanity, recovery is the exception. Country "homes" where the harmless, hopelessly insane can be kept was advised, while the State hospitals can keep all cases for one year under observation and keep violent cases. This system has been very successful in Wisconsin, and an appeal on the part of the society to the Legislature was asked.

"Provision for the Insane in Hospitals" was read by Dr. John Curwen of Warren. In his exhaustive paper most careful methods for treatment were presented as well as a large amount of statistical matter relative to the cost of caring for the insane.

"Hypnotism, Dominant and Relaxant," was read by Dr. George E. Brill of Harrisburg, and this closed the exercises for the afternoon. In the evening Dr. J. T. Rathrock, Commissioner of Forestry, gave an illustrated lecture on "Sanitary Relations of Our Highlands to the State." The views exhibited were beautiful and the lecture most interesting. Attention was particularly called to the necessity of protecting existing forests, and to the advantage of planting trees upon the barren mountain sides of the State, thus insuring a water-supply and adding to the general sanitary health of the State. Later the faculty of Franklin and Marshall College entertained the delegates.

It is to be regretted that the committee having in charge

the assignment of papers should have so crowded them. Many which promised to be most interesting were "read by title," presumably because their various authors had not the time at their disposal to wait from session to session in the hope of finally being able to read them. For the same lamentable lack of time, discussion was greatly limited, some papers receiving none. The papers in general were excellent, and the meeting an undoubted success.

The following officers were elected for the coming year:

President, W. B. Lohman, Cambria County; first vice-president, R. B. Watson, Clinton County; second vice-president, G. W. Guthrie, Luzerne County; third vice-president, J. A. Ehler, Lancaster County; fourth vice-president, Henry Landis, Berks County; secretary, C. L. Stevans, Athens; assistant-secretary, G. W. Wagoner, Johnstown; treasurer, G. B. Dunmire, Philadelphia.

Johnstown was selected as the place for next year's meeting. Two thousand dollars was voted the Rush monument fund.

THIRD DAY.

DR. C. W. DULLES of Philadelphia opened the session with a "Report on Hydrophobia." During the past year he has been able to collect from various sources reports of but six cases of the affection in this country. Of the six, three gave negative results from inoculations and the cases generally confirmed his belief in the non-existence of rabies.

During the past twelve years in the United States, the average number of cases collected by Dr. Dulles has been fourteen. France, where Pasteur's methods have been instituted, shows no decrease, but Germany and England, without the method, do. The speaker advised against the wholesale dosing with narcotics and the forced feeding of patients, the former treatment causing some deaths in his opinion, from their depressing action.

"Corneal Ulcers, Varieties and Treatment," by Dr. Joseph E. Willits was then read. Dr. Lautenbach of Philadelphia discussed the paper and dwelt upon the importance of early, frequent, and thorough cleansing of the eye. Dr. P. J. Kress of Allentown then read a paper, entitled "Determination of Errors of Refraction by the Skiascope During Sleep," and spoke of its value in the case of children.

The "Address in Obstetrics" was read by Dr. S. S. Fowler of Marionville. The paper, written from the standpoint of the general practitioner, said it would be a sorry day when the "family doctor" existed no more. The specialist should be the friend of the family doctor, and if called for consultation, should still leave him, the doctor, in charge. He called attention to the gynecologist who, seeing a woman who has had eight or nine children, exclaims, "Madam, you have a frightful tear, the physician who attended you last must have been most careless!" Carelessness gives rise to the calamities of obstetrics and just as long as the practitioner thinks his case "will do as well as the majority do," so long will he take risks. He decried the delay in emptying the uterus in cases of persistent vomiting until the patient becomes weak and

exhausted; the undue haste to use forceps; and the excessive preparation and paraphernalia of obstetric cases.

DR. MORGAN J. WILLIAMS of Scranton, and Dr. B. S. Pollak of Pottsville, then respectively read papers, entitled "Puerperal Eclampsia" and "Eclampsia." "Extra-uterine Pregnancy, with Report of Cases" was read by Dr. G. D. Nutt of Williamsport. He said the diagnosis of this condition has advanced greatly during the past two or three years, which he thinks is as easy as that of appendicitis. Few cases are seen or recognized before rupture, hence he advises operation by the abdomen.

DR. J. M. BALDY of Philadelphia then read a paper with the title "Gynecological Reflexes." He condemned the universal custom of attributing various nervous phenomena to lacerations of the cervix and other gynecologic conditions. Such conditions have their local symptoms, but he can see no reason why the uterus should be considered a nerve-center capable of causing general nervous disturbances; on the other hand, it is quite probable that a general disturbance does affect the uterus as it does other organs. "The Conservative Treatment of Fibroid Tumors of the Uterus" was read by Dr. E. E. Montgomery of Philadelphia, who advocated enucleation of the fibroid; by the vagina when possible, by the abdomen when not. Dr. Charles P. Noble then read "The Conservative Treatment of Fibroid Tumors of the Uterus by Myomectomy," in which he said the age and desire for children relatively, and the character of the tumor absolutely, should determine the question of myomectomy or hysterectomy.

DR. M. PRICE of Philadelphia next read a paper on "The Use of the Curette," which he scathingly condemned, and Dr. Anna M. Fullerton of Philadelphia related "Some Experiences in Operative Gynecology." In "The Primary Malignant Diseases of the Corpus Uteri, and the Practical Value of the Microscope in Establishing an Early Diagnosis," Dr. H. L. Williams of Philadelphia made an earnest plea for the more liberal use of the microscope in diagnosis. Dr. W. S. Brenholtz of Lancaster read the next paper, "Nasal Catarrh and Its Relation to Diseases of the Ear." He called attention to the importance of early treatment, not local applications, but general treatment in which he was ably seconded by Dr. Lautenbach, who discussed the paper.

The last paper of the meeting was "Rupture of the Ear-Drum, Not Necessarily Incurable," by Dr. Louis J. Lautenbach. So many untruths are afloat concerning this important matter, and so many errors are accepted as truths, that he wished to call attention to this matter. In the common-school physiology the statement is made that once the ear-drum is ruptured permanent deafness results; as a matter of fact, if treated early, nearly every case is curable, and many ruptured drums heal of themselves. Under ordinary conditions the ear-drum has considerable recuperative power, and even after removal of the ossicles there may be a new membrane formed. The drum-head may be entirely absent and yet the hearing good, let alone simple perforation, and it is to be remembered that the articulation of the stapes with the oval window is *the* essential to hearing.

DR. W. B. LOHMAN, the newly elected president, was then escorted to the Chair by Drs. Fowler and Craig, and after a brief speech the Society was declared adjourned. In the evening the Lancaster County and City Medical Society entertained the delegates with a dinner, and the fiftieth anniversary of the State Medical Society ended.

FORTY-THIRD ANNUAL MEETING OF THE KENTUCKY STATE MEDICAL SOCIETY.

Held at Maysville, Ky., May 11, 12, and 13, 1898.

THE President, J. M. MATTHEWS, M.D., of Louisville, in the Chair.

FIRST DAY—MORNING SESSION.

DR. JAMES B. BULLITT of Louisville read a paper, entitled

DIAGNOSIS AND TREATMENT OF OSTEOMYELITIS.

He stated that the affection is an inflammation of bone, its medulla and its covering, the medulla being the starting-point as a rule; for anatomic reasons the bone and its fibrous covering are secondarily involved. It is caused by chemic irritants, or infections of micro-organisms. It is definitely known that no specific germ exists, the infection being by a number of pus-producing organisms. Of these the most frequent are the golden pus coccus and the staphylococcus pyogenes aureus. In fulminant cases the latter germ is the most frequent cause. It is essentially, though not exclusively, a disease of childhood, the condition of the circulation in growing bone being responsible for this. Many terminal twigs or loops of blood-vessels exist in the ends of the long bones, permitting a stagnation of foreign particles, micro-organisms and the like, starting as a rule at the diaphyseal side of the cartilage. In adults it generally follows injury to the bone. The femur is most frequently the seat of the trouble, as it grows the most rapidly. Males are more frequently affected than females. The pathologic process consists of rapid thrombosis, coagulation necrosis, and suppuration, along with the local destruction incident thereto, with possibilities of septic intoxication.

The symptoms are a feeling of great exhaustion, followed quickly by pains. Chill accompanies the pain, at first general, but rapidly becoming localized, and very severe. Fever follows, and may be high. Tenderness, swelling, and redness develop over the area affected. With this is the characteristic muscular spasm pointing to the bone affected by posture incident thereto. Edema should be regarded as pathognomonic. A scarlatinaform rash may appear upon the skin. Fat embolism may occur, and there is often albumin in the urine. It is to be diagnosed from acute rheumatism and from typhoid fever.

The treatment is essentially surgical; no drug can be of any service. In the fulminating type rapid interference is necessary for the preservation of life as well of limb. Open the bone by trephining, scrape out thoroughly with a spoon, and incise freely any neighboring joint affected.

DISCUSSION.

DR. JOHN M. FOSTER of Richmond: My experience has been limited to some dozen cases, and but one of these was seen early enough for intervention to save the limb. One patient had had a fall of about ten feet, alighting on his feet, the process developing in the ankle. The condition was not recognized at first, and when I saw it there were two large pus-sacs in the leg on its posterior surface. Finally an amputation in the middle thigh had to be done. In this case a large part of the bone was saved by scraping out the medulla for some distance up and draining. I mention this to show the rapid and extensive involvement sometimes seen in these cases, it having extended in a short time from the ankle to the middle thigh. I hope that now the subject is more thoroughly taught in the schools than was formerly the case. The treatment is surgical, and it should be prompt and thorough.

DR. W. L. RODMAN of Louisville: I arise only to emphasize a few points brought out by the essayist in his excellent paper. It is frequently impossible to differentiate between osteitis, periosteitis, and osteomyelitis, they merge so one into another, especially those of an explosive character being difficult to diagnose. The medicinal treatment avails nothing, and it was a pleasure to hear the essayist so positive on this point. Prompt and judicious surgery is the only thing. Trephine and drain the medullary canal upon the same principles that one would drain any other cavity. If this were done promptly we would see fewer cases in the chronic state. I would not agree with the essayist that the femur is most frequently involved, though only on personal experience, having seen it more frequently in the humerus and tibia.

DR. B. MERRILL RICKETTS of Cincinnati: I am convinced that operative procedures are not resorted to frequently enough. Frequent explorations should be resorted to, trephining two or three places into the bone to find out the cause of the symptoms. I use the irrigating curette, and Wyeth's method, curetting out the canal of the bone and leaving a large part of the bone, the tube being drawn out a half-inch every day until entirely removed.

DR. BULLITT, in closing: My statement that the femur is more frequently involved is not from any personal experience, but from the statistics of Tallmann, who has had more opportunity of observing a large number of cases than any other observer.

DR. R. ALEXANDER BATE of Louisville then read a paper on

THE RATIONAL THERAPEUTICS OF THE ANIMAL EXTRACTS.

He referred to the group of animal extracts, and called attention to pepsin, pancreatin, ox-gall, beef-blood, bone-marrow, spermin, nuclein, thyroid, suprarenal, thymus, orchitic, brain, renal, splenic, ovarian, uterine, cardiac, and lymphatic extracts. There are two classes of extracts—those made from secreting organs and those from non-striated muscle. The use of these extracts cannot be limited to isopathy, but when administered upon iso-

pathic principles, as thyroid in myxedema, etc., they must be continued, just as food must be repeated to relieve recurring hunger. In all cases reported cured the subsequent history of the case has shown that withdrawal of the medicine has been followed by a recurrence of the disorder, but again controlled by its administration.

DR. R. C. MCCORD of Lebanon read a paper, entitled

THE UTILITY OF THE BLOOD-CLOT IN THE TREATMENT OF WOUNDS.

He detailed his experience with Schede's method, and considered it a valuable agent, especially in the condition resulting from injuries to fingers made by machinery, leaving some of the bone exposed. He had seen good results follow the use of the clot in injuries where as much as one-fourth of an inch of bone was exposed.

EVENING SESSION.

The annual address of the President was delivered in the Baptist Church. In his address he paid a feeling tribute to the late Dr. J. Q. A. Stewart, an ex-president of the Society, recently deceased. He then said that when addressing the Medical Society of the State of New York he had stated that there were no "quacks" in the State of Kentucky, and the remark had evoked considerable applause, and he further stated that Kentucky was the only State in the Union that had accomplished so much. Attention was called to the fact that the law against quackery now rests with the courts and not with the Board of Health. Any person who knows of the violation of the law has only to swear out a warrant, have the person arrested and prosecuted, and the board will assist. Due credit was given to the secretary of the board for obtaining the much needed legislation during the last session of the Legislature regarding the "osteopaths," which makes them undergo an examination before the board before they can practise in the State.

Regarding the relation of the people to the profession, the speaker said he hoped that the day is not far distant when the people will learn to discriminate between the pretender who strews pamphlets at the door and the hard-working and competent physician, to know the difference between jealousy and contempt, and not ascribe envy to the family physician, when in truth he is trying to protect them. Especially he hoped the minister of the gospel would withhold his pen from endorsing that which would ruin his wife or daughter or his trusting parishioners.

Attention was called to the lack of any action of the State Society in the matter of the Rush Monument Fund, and he urged that some action be taken at once. A splendid tribute was paid to the American Medical Association, "the peer of any medical organization in the world." He urged every one that possibly could to make the sacrifice of time to attend the meeting in Denver, and congratulated the profession of the State of Colorado for its excellent preparations. He stated that the Association is the owner of a journal equal to any in the world, which, under the management of its able editor, has increased its subscription to over 10,000. He urged each

member to subscribe for it, even though not a member of the American Medical Association. He stated that there was noticeable a lack of interest in the State meetings, and believed that the cause of it is the large number of local and district societies. He suggested as a remedy for this condition a reorganization of the society, making a membership in it dependent on membership in a county society. This would necessitate the formation of county societies where they do not now exist, delegates being appointed to the State society according to the membership in the county bodies, one for every five. No paper should be read at the meeting of the State society that has not already been read before the local county body, and the assessment for the use of the State society should be \$1 per annum. A committee consisting of Drs. Henry E. Tuley of Louisville, John A. Lewis of Georgetown, and J. N. McCormack of Bowling Green was appointed, and reported a change of the constitution as suggested by the President, to be voted on at the next regular meeting.

(To be continued.)

REVIEWS.

THE FACULTY OF SPEECH. By JOSEPH COLLINS, M.D.
Pp. 432. The Macmillan Co., New York, 1898.

THIS volume, which as an essay gained for the author the Alvarenga prize of the College of Physicians of Philadelphia in 1897, is the most thorough and comprehensive study of aphasia which has so far been published. Aphasia has always been a difficult subject to master for the general student of medicine as any subject must be when there are so many and diverse opinions concerning the exact limitations of the term, and when so many deductions are based upon theories instead of facts. Dr. Collins' work shows that he has been an indefatigable student. His style is facile yet forcible. He smoothes out the tangle of theories in which aphasia has, for so long, been embedded in a way which is both comprehensive and entertaining.

We must, however, take exception to the numerous new and often enigmatical words which grace the text from the dedication page to the end. Simplicity of expression is a great and pleasing boon to the reader and is infinitely to be preferred to terms which though they may be expressive to the initiated are often confusing and incomprehensible to others.

The work opens with an introduction on the "Disorders of Intellectual Expression."

This classification, in the main, conforms practically to that adopted by neurologists generally. The recognition of motor and sensory aphasia and the division of the latter into word-deafness and word-blindness are universally accepted. We cannot, at the present time, find fault with the author for classifying the so-called subcortical aphasia as forms of aphasia. Properly speaking, subcortical aphasia, as Dr. Collins admits in a foot-note on page 155 and elsewhere, is not aphasia at all, but it is so generally accepted as a variety of aphasia that a classification would be incomplete without a reference to it. It is

probable, though, that in future works this interesting condition will not be spoken of as aphasia. The same leniency, however, cannot be extended to that part of the classification in which aphasia is made to depend upon lesions of the peripheral neural mechanisms of the visual, auditory, and articulo-motor systems. Lesions of the retina and of the organ of Corti may, and often do, interfere with the transmission of impressions to the cerebral centers, but it is clearly inadmissible to consider such conditions as forms of aphasia, a term which should very properly be confined to disturbances of speech resulting from lesions of the cortical speech-centers only.

The chapter on the history of aphasia is most complete and interesting. It shows the thoroughness of the author's research and is a model of what such a chapter should be. The pages on the genesis and function of speech constitutes one of the most important and valuable parts of the work. This is a subject which is rarely touched upon by writers on aphasia except in a most superficial manner, and yet a knowledge of it is essential if one would comprehend the fundamental principle upon which the theory of aphasia is founded. The author treats his subject thoroughly and comprehensively and the student is advised that a careful perusal of this part of the work will rob aphasia of many of its difficulties.

In the chapter on the "Conception of Aphasia" the author illustrates topographically the centers concerned in aphasia. The region which embraces these centers he very appropriately terms the "zone of language." The functions of the centers are discussed; their relation to each other through the medium of association paths is pointed out, and the site of the revival of words in silent thought is carefully elaborated.

The author believes the primary revival of spoken words is in the auditory center, and of written words either in the visual or the auditory centers, and that the kinesthetic center plays no part in silent thought at all. This agrees fully with the views expressed by Bastian and should meet with no opposition by those who have carefully studied the subject.

Exner's view in regard to the existence of a distinct graphic motor center is combatted with fair criticism of the cases offered in support of such a theory and also by convincing arguments, yet there are some recent writers, of whom Mills is one, who still describe such a center. Most readers will agree with the author that the existence of such a center is, at least, decidedly improbable.

The chapters on motor and sensory aphasia contain graphic descriptions of these conditions. They are illustrated by the citation of numerous cases which materially assist in explaining and enforcing the author's opinions. He advances the doctrine that impulses from the perceptive visual and auditory centers travel through the articulatory kinesthetic center in Broca's convolution in order to reach the motor centers in the Rolandic region. This differs totally from the teachings of Bramwell and Bastian both of whom believe the perceptive visual center is in direct communication with the Rolandic centers for movements of the fingers. According to Collins, in

spontaneous writing and writing from dictation, the impulses travel respectively from the perceptive visual and auditory centers through Broca's center to the Rolandic center for movement of the fingers, while Bramwell, Bastian, Mills, and other recent writers believe visual impulses travel directly from the higher visual center through special association fibers to the motor centers for the fingers. The latter hypothesis seems more reasonable. In Appendix II. the author cites a case which seems to support his statement, but the diagnosis was not confirmed by an autopsy and there are those who might, with propriety, disagree with him in regard to the situation of the lesion.

Interesting chapters follow on the diagnosis, etiology, morbid anatomy, and treatment. They are thorough, artistic, and show deep thought and great care in their preparation. The book is one that will be read with deep interest both for the fund of information it contains and for its scholarly construction.

A TEXT-BOOK OF MENTAL DISEASES. By DR. THEODORE H. KELLOGG, former Superintendent of the Willard State Hospital, New York: Wm. Wood & Co., 1897.

IN this volume the main facts of modern psychiatry are set forth in readable and interesting form. Although a brief chapter is devoted to the pathology of insanity and an occasional reference to psychologic explanations is found, the work is mainly clinical in character, and it is in its value as a practical treatise that its chief claims for merit lie. Dr. Kellogg divides his theme into two parts. The first and larger part consists in discussions of the statistics, nosology, etiology, symptomatology, and pathology of insanity; the evolution, and terminations of mental diseases; their diagnosis, prognosis, and treatment.

Under the heading of etiology, heredity, environment, education, climacteric changes, shock, fear, etc., etc., the various divisions of the subject are treated at length and their relative importance estimated. Few writers on insanity can resist the temptation to offer their own nosologic arrangement and Dr. Kellogg is not one of the few. His classification is careful and comprehensive, and is defended on logical grounds.

The psychic manifestations of insanity are presented seriatim, each with a terse description. The author wisely devotes several pages to physical symptoms without, however, laying too much stress upon the so often overdone "*stigmata degenerationsis*." One of the most interesting parts of the book is the chapter on treatment. It is a presentation of the deductions of modern efforts in psychiatric therapeutics, and reflects, in great degree, the writer's State hospital experience. Prophylactic, educational, psychic, hygienic, and dietetic measures, home and institutional methods, medical and surgical procedures are all discussed in detail. Medicinal remedies are suggested with, perhaps, too much enthusiasm. Recent therapeutics, organic extract feeding (especially thyroid), lumbar puncture, etc., receive due mention.

The second part of the work is devoted to concise delineations of the various types of insanity as arranged

in the author's classification. It presents, among others, the following noteworthy features. An effort is made to portray the progression of each form of mental disease through *stadias cœnaestheticum, acutum, debilitatis et terminale*. Dr. Kellogg insists upon the scientific propriety of the term "partial insanity" and, with Spitzka and others, treats under the heading "primary monomania" those cases which constitute so large a number of otherwise-styled paranoiacs.

The book is carefully arranged and conveniently indexed. The illustrations are well chosen, but for a descriptive work, altogether too few.

ABOUT CHILDREN. By SAMUEL W. KELLEY, M.D.
Cleveland: The Medical Gazette Publishing Co., 1897.

THIS little book is a collection of six lectures delivered to the nurses in the training School of the Cleveland General Hospital in February, 1896. As their treatment is somewhat general and in a short space they cover a wide ground, they are not primarily designed for physicians. The manner of presentation is easy, conversational, and taking, so that they make interesting reading not only for nurses but also for mothers and those interested in the practical care of children. Their scope is large enough to include information on anatomy and physiology, artificial feeding, the effects of medicinal and hygienic remedies and symptomatology. The advice given is, in the main, sensible and rational. There is a short appendix containing a few recipes of foods for sick children.

ATLAS AND ESSENTIALS OF BACTERIOLOGY. By PROFESSOR K. B. LEHMANN, Chief of the Hygienic Institute in Würzburg, and DR. RUDOLF NEUMANN, Assistant in the Hygienic Institute in Würzburg. Illustrated. New York: William Wood & Co., 1897.

By republishing in English Lehmann's popular hand atlases the publishers have done the English reading medical public a service. This particular volume is so widely known in the original German that it need but be stated that the plates are from the original source and that the text is a good translation to render the book the highest possible praise. The extreme condensation of the reading matter is to be regretted.

A HANDBOOK OF THERAPEUTICS. By SYDNEY RINGER, M.D., F.R.S., Holme Professor of Clinical Medicine, University College, etc., and HARRINGTON SAINSBURY, M.D., F.R.C.P., Physician to the Royal Free Hospital, Victoria Park, etc. Thirteenth edition. New York: William Wood & Co., 1897.

RINGER'S "Therapeutics" has always occupied a unique place among the books on the subject, its popularity chiefly depending upon clinical aspect of the work. The present edition, the thirteenth, does not vary from former ones in this aim. Particular emphasis is laid upon the use of drugs in disease, the indications and the contraindications for their employment. No more than is essential for the comprehension of the mode of action of a drug or other remedial agent is given of physiologic action; but the influences of therapeutic measures of all

kinds in disease are thoroughly considered. This is the key-note of this work and to this position must be ascribed its wide fame.

In the present edition we note, as additions, a discussion of the Schott treatment of heart disease, scarcely of the length the subject deserves. Serumtherapy and organotherapy are considered at length and the articles on these subjects contain all that is recent in their relations to the treatment of specific diseased conditions. The digestive ferments are described under "Dietary for Invalids." Among the newer drugs which have found a place here are eucain and iodol; but we find no mention, for instance, of Golde's work on the antiseptic silver salts. The edition is, of course, thoroughly modern, and will undoubtedly meet the same cordiality that has been extended to its predecessors.

THERAPEUTIC HINTS.

For Herpes Progenitalis.—If the surface be dry, apply one of the following ointments:

- | | | | |
|------|-----------------|----------------|-------|
| 1. R | Emplast. plumbi | } aa | 3 v |
| | Lanolini | | |
| | Adipis | | |
| M. | Ft. ungt. Sig. | External use. | |
| 2. R | Lanolini | } aa | 3 iv |
| | Ungt. hydrarg. | | |
| | Ol. olivæ | | |
| M. | Ft. ungt. Sig. | External use. | 3 ii. |

If the affected parts be moist with secretion, first wash with a solution of boric acid, and then employ the following powder:

- | | | |
|----|----------------------|-------------------------------|
| R | Bismuthi subnitratis | gr. xvi |
| | Ac. tannici | gr. lxxx |
| | Pulv. amyli | ℥ iii. |
| M. | Sig. | External use. Dusting-powder. |

For Pityriasis of the Scalp.—

- | | | |
|----|----------------|--|
| R | Salophen | gr. xiv |
| | Vaselini | ℥ i. |
| M. | Ft. ungt. Sig. | For inunction morning and evening.—Fournier. |

For Pustular Acne.—

- | | | | |
|----|----------------------|--|---------|
| R | Bismuthi subnitratis | } aa | gr. xxx |
| | Hydrarg. ammoniat. | | |
| | Ichthyol | | |
| | Vaselini | | |
| M. | Ft. ungt. Sig. | Apply at night.—Von Hebra and Ullmann. | |

For the Bites of Vermin and Mosquitoes.—

- | | | |
|----|------------------|---------------|
| R | Balsam. Peruvian | m. lxxx |
| | Ung. styracis | 3 vi |
| | Ol. olivæ | 3 v. |
| M. | Sig. | External use. |

Or the following ointment:

- | | | |
|---|----------|---------------|
| R | Naphthol | 3 i-3 ii |
| | Ætheris | q. s. p. diss |
| | Menthol | gr. iv-xlvi |
| | Vaselini | ℥ iii. |